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ABSTRACT

This report presents results of classroom observations of kindergarten and first grade teachers. Nine full days of observations were completed with each of the teachers for 2 consecutive school years. Results are presented in terms of kindergarten teachers' time allocated to reading and to all instruction as well as their frequency of instructional interactions during reading instruction and while reading stories to their classes. AM to PM results are compared for teachers teaching half-day classes. In addition, year to year comparisons are presented for teachers of half-day and full-day kindergarten instructional interactions. Correlations for kindergarten and first grade teachers for AM/PM and year to year frequencies of decoding interactions were all above .88 and significant above .001 level. Discussion focuses upon the greater likelihood of stability for half-day kindergarten teachers than for first grade teachers, the difference between these results and findings by other researchers suggesting that teachers' behaviors lack stability, and possible explanations for why some teachers may be somewhat less stable than their peers. Data from the study are presented on charts and tables. (Author/JD)

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CENTER FOR THE STUDY OF READING

Technical Report No. 472

TEACHER STABILITY REVISITED: HOW CONSISTENT ARE TEACHERS FROM MORNING TO AFTERNOON AND FROM YEAR TO YEAR?

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May 1989

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Abstract

This report presents results of classroom observations of kindergarten and first grade teachers. Nine full days of observations were completed with each of the teachers for 2 consecutive school years. Results are presented in terms of kindergarten teachers' time allocated to reading and to all instruction as well as their frequency of instructional interactions during reading instruction and while reading stories to their classes. AM to PM results are compared for teachers teaching half-day classes. In addition, year to year comparisons are presented for teachers of half-day and full-day kindergarten classes as well as for first grade teachers' time allocated to reading and all instruction, and for instructional interactions. Correlations for kindergarten and first grade teachers for AM/PM and year to year frequencies of decoding interactions were all above .88 and significant above .001 level. Discussion focuses upon the greater likelihood of stability for half-day kindergarten teachers than for first grade teachers, the difference in these results in comparison to findings by other researchers that suggest that teachers' behaviors lack stability, and possible explanations for why some teachers may be somewhat less stable than their peers.

TEACHER STABILITY REVISITED: HOW CONSISTENT ARE TEACHERS FROM MORNING TO AFTERNOON AND FROM YEAR TO YEAR?

Classroom observations have a long tradition in the field of education. For as long as researchers have been interested in finding out if some teachers are more effective than others, they have also been interested in how teachers deliver instruction. Yet the question of how stable teachers are from one year to the next is but a footnote in the literature on teaching, a question that few researchers have explored. When the question of teachers' stability from one group of students to another or one year to another has been addressed, the concensus of that work is that teachers are generally unstable. For example, when reviewing studies of classroom instruction that identified significant differences among teachers in several areas, Rosenshine (1970) stated, "I conclude that such results occurred because there was greater variation in student or teacher behavior within these curricula than among the curricula" (p. 289). Shavelson and Dempsey-Atwood (1976) later stated that, "measures of teacher behavior may be too unstable to yield consistent relationships with student outcomes" (Shavelson & Dempsey-Atwood, 1976, p. 544). Doyle (1977) declared, "if there is wide variability in either the behavior of teachers or the instruments used to measure that behavior, then estimates of process-product relationships are precarious at best" (p. 169). Borich (1977) concluded, "The results of these studies suggest that teacher behavior may be unstable across long periods of time and content" (p. 300). Darling-Hammond, Wise, and Pease (1983) more recently concluded after summarizing research on teacher stability, "The bottom line question is, Does a given teacher exhibit the same kinds of behavior at different points in time and within different teaching contexts? In general, the answer is 'no', especially with regard to measures of specific, discrete teaching behaviors" (p. 299).

Despite these strong claims, Brophy (1972) found teachers to achieve reasonably stable results with different classes from one year to the next. This was a study of second grade teachers' classes' performances on the Metropolitan Achievement Test. Gall and Gersten (1987) are finding similar results in their observations of algebra teachers.

In this paper we will illustrate how similar groups of kindergarten and first grade teachers from three school districts are on substantially different measures of teaching, time spent and frequency of interactions during reading, story reading, and all instruction. These data were collected during whole-day classroom observations as part of a longitudinal study in progress (Meyer, Linn, & Hastings, 1985). This program of research began during the 1983-1984 school year in three school districts in Illinois. Approximately 650 children in two cohorts with about 40 teachers per year participate in this work. The current research design includes following each cohort from kindergarten through at least sixth grade.

Methodology

Classroom observations are an integral part of the data collection efforts on this longitudinal study. Each teacher at appropriate grade levels in three schools for each cohort participates. Nine full-day observations were completed for each kindergarten and each first grade teacher in the three school districts. Interrater reliability has consistently been above .85. The classroom observation process is described at length elsewhere (Meyer, Linn, Mayberry, & Hastings, 1985) and will therefore be described only briefly here.

A team of up to 12 persons complete observations each school year. Each observer tape records all instructional activities during the school day while making a hand-written transcript of the actual observations. The goal for these observations is to record the amount of time teachers allocate to each activity, the content of each instructional interaction, to whom the teacher delivers instruction (individual student, small group, or the entire class), feedback to each response if any occurs, behavior

management frequencies, praise or corrective statements, delivered to individuals or groups of students, and scores of student work samples.

Observers use the tape-recorded segments of instruction as back-ups for their written transcripts. They complete coding their observations within a few days of the actual observation. A list of activity codes, interaction and feedback codes appear as Figure 1. Each interaction category can be analyzed separately or grouped with others that are similar.

[Insert Figure 1 about here.]

The context of this study offers a unique opportunity to address the question of teachers' stability. All but three of the 14 kindergarten classes for Cohort 1, and 13 of the classes for Cohort 2 were half-day classes. The remaining three classes in each cohort were whole-day classes. Therefore, these 25 half-day classes were each observed mornings and afternoons as each constituted a "full day" for those students nine times each year for 2 years. Therefore, there were actually 36 observations of the half-day kindergarten teachers over 2 years. There were 18 full-day observations of the whole-day kindergarten and first grade teachers. Results will be presented for teachers' time allocations to reading instruction, all instruction, and story reading. The frequency of decoding, scriptal, text-tied, and story grammar interactions during reading instruction and story reading will also be reported for comparing morning and afternoon classes and results of Cohort 1 with Cohort 2.

Results

Kindergarten Time Allocated to Reading and All Instruction

Time. Results will be presented separately for kindergarten and first grade teachers by district. Table 1 shows kindergarten teachers' average time allocated to reading instruction and all instruction. The number of classes represented here is 27 for two cohorts of kindergarten children. Generally, within district teacher instruction is more similar than instruction between districts. District A teachers allocate from 26-40 minutes a day for reading instruction whereas District B teachers average between 0 and 15 minutes a day. District C teachers allocate between 3 and 7 minutes daily to reading. Similar differences exist between districts for all instruction except that District C teachers, who teach whole-day classes, average more minutes of total instruction each day than teachers in either District A or District B, who teach half-day classes. These means and standard deviations are averages from 9 full days of observation from late September through April of each school year. All time is reported in minutes.

District A and B teachers have 150 minutes a day allocated to them for their total school day. District A teachers allocate a greater proportion of their 150 possible minutes to reading and all other instruction than do teachers from either District B or District C. These findings are consistent from teacher to teacher and cohort to cohort despite the fact that District C teachers have school days 300 minutes long. All teachers are even fairly consistent in the amount of time they allocate to reading from one cohort to the next, thereby suggesting substantial stability for their minutes spent in reading instruction for 2 consecutive school years as well as from morning to afternoon classes for the half-day teachers. These teachers would rank in exactly the same positions 100% of the time for time spent in reading instruction and over 75% of the time for minutes in all instruction. The somewhat large standard deviations illustrate variability between rounds for the nine observations each year. The means for the nine rounds are quite similar for morning and afternoon classes and for Cohort 1 and Cohort 2 class comparisons. Round to round comparisons reveal systematic variations as will be illustrated in the figures that follow.

[Insert Table 1 about here.]

Figure 2 shows a graph of a teacher selected randomly (District B, Teacher 1) with morning and afternoon classes with two cohorts of students. This figure shows great consistency in the time this teacher allocated to reading and all instruction for 2 consecutive school years.

[Insert Figure 2 about here.]

Figure 3 shows average minutes spent in reading instruction for all kindergarten teachers with two cohorts of students. This figure illustrates the similarity of teachers within districts in terms of the amount of time spent in reading instruction as well as the differences between districts on this same measure.

[Insert Figure 3 about here.]

Interactions. How similar are teachers' instructional interactions with their students during reading instruction? Table 2 shows the results of tallies calculated from the same 9 full days of observations from late September through April as reported for time in Table 1. Therefore, these results are from data gathered during kindergarten reading instruction for 24 classes observed for 2 consecutive years.

During these observations each instructional interaction was coded into the major categories of decoding or comprehension. Those interactions focused on letter sounds, blending, phonics rules, or word reading were classified as decoding. Scriptal and text-tied interactions were those questions children answered either from information they had in their heads (scriptal) or from questions answered in the text they read. These interactions were collectively considered comprehension.

Teachers in all three districts are very consistent in the number of decoding interactions they average for morning and afternoon classes each year, though two District B teachers have a greater number of decoding interactions for Cohort 2. Teachers 1 and 2 from District A, the three teachers in District B, and the three teachers in District C are remarkably consistent when one year's average number of decoding interactions are compared with the next, or when comparing one cohort to the other. Similar stability is apparent for District A Teacher 1 Cohort 2, and Teacher 2 in District A with both cohorts. Teacher 1, Cohort 1 from District B, Teacher 2 from District B, and Teacher 3, Cohort 2 as well as Teachers 2 and 3 from District C also show great consistency in their frequency of scriptal and text-tied interactions with different classes over the 2 years they were observed.

[Insert Table 2 about here.]

Story grammar interactions were coded when teachers asked students text-tied questions about characters, setting, style, or plot as children read during reading instruction. Frequencies for this category are understandably low (since these data were collected in kindergarten) for all teachers with all classes. District A teachers asked more of these kinds of questions than District B or District C teachers.

Time and interactions during story reading. Table 3 shows kindergarten teachers' time and interactions during story reading for the same two cohorts of students that appeared in Table 1 and Table 2. This activity was selected in addition to kindergarten reading instruction because it presents a contrast to that activity and interactions for kindergarten teachers and because most kindergarten teachers deem story reading to be an important part of their curriculum. Our question was whether the same patterns of time and interaction stability would be present for the story reading activity as it had been for reading instruction. These results are contained in Table 3.

District A teachers vary the amount of time they spend reading stories to their classes quite a bit from morning to afternoon and from cohort to cohort as do the teachers in both District B and District C. For all but two teachers in District C the frequencies of scriptal questions are actually quite low and somewhat unstable from cohort to cohort and class to class. Text-tied interactions also appear to vary

quite a bit from teacher to teacher and from cohort to cohort with particularly low frequencies for the District B teachers, especially when their frequencies are compared with those of the District C teachers.

[Insert Table 3 about here.]

Figure 4 shows graphs of the amount of time a randomly selected kindergarten teacher spent reading stories and the average number of scriptal and text-tied interactions that teacher had with students during this activity.

[Insert Figure 4 about here.]

Similarity from round to round, AM and PM. Since the kindergarten teachers teaching half-day classes were actually observed 36 times over 2 years, this schedule of observations permits a careful examination of both the amount of time and the frequency of interactions during reading and all instructional activities. When plotting the number of minutes allocated to decoding instruction during each round of observation for each teacher in Districts A and B it appears that these teachers are remarkably consistent from morning to afternoon.

[Insert Figures 5 and 6 about here.]

When plotting these same teachers' frequencies of interactions during decoding instruction, the results are also remarkably stable. Similar patterns are apparent for these same teachers as they taught Cohort 2 students.

These findings which collectively suggest substantial stability for these kindergarten teachers, particularly during reading instruction, raised the question of whether this type of stability would also be found for the sample of first grade teachers observed for full days under the same circumstances described for the kindergarten teachers. The next portion of this paper presents the results from observations of first grade teachers, 9 full days each for 2 school years with two cohorts of students.

First Grade

Time allocated to reading and all instruction. Table 4 presents the first grade teachers in the same way that Table 1 represented their kindergarten colleagues. In this table, all school days are approximately the same length, just under 400 minutes. Once again, with few exceptions, teachers in each district tend to look more alike than any one of them looks like a teacher in one of the other two districts. This table shows the total minutes each teacher averaged over the nine rounds in reading and total instruction.

Minutes in Table 4 are the average number of minutes the teacher spent in reading and in all instruction during the nine observations, regardless of how the teachers delivered instruction. With few exceptions, these results show that first grade teachers from all districts fluctuated more in their time allocated to reading and all instruction than their kindergarten colleagues, though there is some year-to-year consistency in rank order of teachers. Teacher 4 from District A and Teachers 1 and 4 from District B are exceptions to this finding as they are very consistent in the number of minutes they allocated to reading instruction for 2 consecutive years. Teacher 5 in District B and Teacher 2 in District C also allocated very similar amounts of time to all instruction for the 2 years they were observed. Although some teachers increased the amount of time they spent in reading instruction with Cohort 2 students, 9 of the 12 teachers actually decreased their minutes of total instruction with Cohort 2 classes, the second year they were observed.

[Insert Table 4 about here.]

Interactions. Table 5 presents the teachers' frequencies of interactions during reading instruction. In the decoding column, 5 of the 12 teachers are fairly stable with their average number of decoding interactions for Cohort 1 and Cohort 2 students, whereas the remaining six teachers have differences in their decoding frequencies of more than 20 interactions in this category. The results for the scriptal column reveal that 7 of the 12 teachers have frequencies for both cohorts of 10 or fewer differences between cohorts, and those teachers who appear stable most often have very similar tallies from one year to the next. Seven of the 12 teachers also have very comparable numbers of text-tied interactions for both cohorts. If one employs a somewhat arbitrary criterion of 10 or fewer interactions as constituting differences as a measure of stability for story grammar interactions, then the first grade teachers are quite stable in this column as well, though the low frequencies in this category threaten the reliability of these results.

[Insert Table 5 about here.]

Correlations of AM/PM and year to year frequencies of interactions. Table 6 shows correlations from AM to PM classes for kindergarten teachers and year to year correlations for kindergarten and first grade teachers' decoding, scriptal, text-tied, and story grammar interactions. Scriptal and text-tied interactions were tallied together for kindergarten and separately for first grade teachers. Despite the low number of teachers represented in each of these categories, all correlations for AM/PM teachers are significant at the $p = < .001$ level. All but the story grammar correlations are significant for kindergarten teachers year to year. Only the frequency of decoding interactions produced significant correlations from one year to the next for first grade teachers.

[Insert Table 6 about here.]

Time and interactions during story reading. Table 7 shows first grade teachers' time and interactions while reading stories. If these teachers are ranked for minutes and interactions allocated to reading stories, over half of them (56%) would be considered stable for the amount of time spent reading stories over the 18 times they were observed during 2 years. In addition, the correlation across the 12 teachers on average time spent reading to Cohort 1 with average time spent reading to Cohort 2 is .74. Furthermore, slightly over half of these teachers (53%) would rank identically from one year to the next if compared on their number of text-tied questions asked to Cohort 1 and Cohort 2 students.

[Insert Table 7 about here.]

Similarity from round to round, year to year, stable teachers. Figures 7 and 8 present plots of selected first grade teachers' frequencies of decoding interactions for nine rounds each for 2 years with two cohorts of students. Solid lines and dots represent data collected with Cohort 1 and broken lines and triangles depict data collected with Cohort 2. The teachers plotted in Figure 7 are examples of teachers who appeared very stable over the 2-year period. In each figure the y axis represents frequency of decoding interactions divided into 100 unit segments. The x axis stands for the nine observational rounds. While the teachers represented in Figure 7 show the greatest lack of resemblance to themselves in the eighth and ninth rounds, they are remarkably similar in the earlier rounds.

[Insert Figures 7 and 8 about here.]

Less stable first grade teachers. Figure 8 shows plots of two first grade teachers selected because they are generally less stable than other teachers when comparing their frequencies of decoding interactions on a round by round basis for two cohorts. Whereas each of these teachers does appear quite stable for the 2 years on an occasional round such as Teacher 1 on Rounds 3, 5, and 7, generally their number of decoding interactions differs substantially from year to year when comparing rounds. These differences are quite apparent for Teacher 1 on Rounds 1, 4, 6, or 8 or Teacher 3 on Rounds 2, 3, 4, or 6, for example.

Discussion

This portion of the report will center on the findings presented here in comparison to the conclusions of those from previous research on teacher stability. It will also attempt to explain why many of these results are quite different from those reported previously. In addition, possible explanations for the differences between findings for kindergarten and first grade will be explored.

Explanation of results. Unlike results reported by other researchers, the results reported from the observations of teachers in this longitudinal study were collected from full-day observations using a continuous coding system that resulted in sequential interaction transcripts of entire school days. The coding system involved every child and group in each classroom thereby producing large tallies of the frequencies of interactions on the average for most teachers in each category though there was substantial variance between teachers in the three schools for most areas. Therefore, this system of data collection lends itself to capitalizing on differences between teachers because it is quite sensitive to numerous instructional variables. Furthermore, whole-day observations allow for data collection on numerous activities that last for short periods of time. These activities might be lost when observations are carried out only for specific activities such as small group reading for example. In addition, while there is change over the course of a school year that at first appears random for virtually every teacher, consistency of these changes from cohort to cohort or AM to PM suggests that these changes are in fact systematic. It appears that these are planful changes in instruction that reflect differences in student ability from the beginning to the end of a school year. Furthermore, curricula change over the course of the school year and one would therefore hope that teachers would do things differently in April than they had done in September.

Kindergarten half-day classes present an unusual opportunity to study teacher stability since classes are almost always heterogeneous. In addition, it may be easier for teachers to replicate themselves from morning to afternoon than from year to year. The kindergarten teachers observed in this study almost always had comparable lesson plans for their morning and afternoon classes. Furthermore, their "special" instruction such as physical education, music, or library almost always also fell on the same day for both classes, a situation that is quite different from what is found for other grades where special schedules and other events are seldom replicated from one year to the next in exactly the same way. In fact, special schedules are usually rotated between grade levels every school year. As the curricula in each grade change throughout the school year, one would expect teachers' instructional interactions to change some over the year as well.

The results that show first grade teachers overall less stable than kindergarten teachers may stem from some of the same issues that enable stability in kindergarten classrooms. First grades are usually grouped with some attention to which children are placed where on the basis of the children's kindergarten performance. Often, teachers receive classes of differing ability on a rotated basis over a number of years so that one teacher will have the higher performers one year and then lower performers the next year as the higher performers from the next cohort rotate to one of his/her colleagues. This type of rotation took place with the first grade classes in this study. One would hope that the ability level of classes would influence teachers' frequencies of interactions as well as time allocated in virtually all instructional settings.

In addition, since all first grades are full-day programs there is greater opportunity for varying time in activities. Teachers are more restricted in 150 minute slots when teaching kindergarten classes. They have fewer opportunities to vary their instruction. Furthermore, first grade teachers have a wider curriculum to teach than kindergarten teachers have. They have a greater number of instructional areas to present and more content to cover in those areas than their kindergarten colleagues.

Further research is needed to explore why some teachers deviate from the more common generally stable patterns found for the majority of the teachers in this study. There was an administrative intervention with one kindergarten teacher in District B between Cohort 1 and Cohort 2 to increase the

amount of time and the number of instructional interactions that teacher had with Cohort 2 students. There was deliberate variation from Cohort 1 to Cohort 2 in the composition of first grade classrooms for all but one teacher in the study because of traditional rotations of groups of high performers to different teachers each year. Beyond these explanations, it is not clear if differences in teachers' behaviors are isolated occurrences or if they are common instances of human variability.

In summary, it is encouraging to find the degree of stability reported here for a group of teachers. It is particularly encouraging that the kindergarten teachers were found to be stable from AM to PM as well as from year to year. As research demonstrates that teachers' behaviors are somewhat stable, the importance of identifying teaching behaviors that prove some teachers more effective than others also increases in importance.

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Table 1

Kindergarten Instructional Time

			Minutes Spent in:			
			Reading		All Instruction	
District A	Cohort	Teacher	M	(SD)	M	(SD)
	1	1 AM	29.56	(17.61)	88.44	(21.73)
	1	1 PM	28.11	(16.58)	92.67	(20.48)
	2	1 AM	35.33	(12.03)	99.11	(13.75)
	2	1 PM	30.67	(15.45)	93.33	(4.80)
	1	2 AM	26.00	(16.13)	81.78	(17.98)
	1	2 PM	27.22	(13.93)	71.89	(26.63)
	2	2 AM	36.33	(11.40)	94.11	(17.19)
	2	2 PM	40.67	(12.36)	92.89	(15.50)
District B	1	1 AM	14.78	(10.57)	68.67	(12.60)
	1	1 PM	15.22	(12.33)	64.78	(15.02)
	2	1 AM	9.22	(7.64)	73.11	(16.68)
	2	1 PM	8.22	(6.87)	69.11	(12.09)
	1	2 AM	10.44	(9.40)	78.89	(19.42)
	1	2 PM	10.00	(7.05)	70.22	(18.36)
	2	2 AM	8.00	(8.08)	76.78	(15.80)
	2	2 PM	6.56	(7.72)	72.11	(13.05)
	1	3 AM	2.11	(4.26)	87.89	(18.62)
	1	3 PM	0.00	(0.00)	86.44	(19.74)
	2	3 AM	5.00	(13.23)	70.00	(8.09)
	2	3 PM	3.33	(9.27)	71.67	(11.03)
District C	1	1	6.33	(11.64)	97.33	(25.70)
	2	1	3.00	(9.00)	159.00	(32.67)
	1	2	6.89	(4.26)	126.33	(24.81)
	2	2	7.44	(10.11)	187.22	(37.65)
	1	3	3.00	(9.00)	86.33	(16.11)
	2	3	5.22	(8.21)	127.00	(44.44)

Note. N = 26 classes, 2 cohorts

Table 2

Kindergarten Reading Instruction: Decoding; Scriptal and Text-Tied; and Story Grammar Interactions

			Decoding		Scriptal and Text-Tied		Story Grammar	
District A	Cohort	Teacher	M	(SD)	M	(SD)	M	(SD)
	1	1 AM	127.89	(57.88)	81.44	(40.50)	3.44	(7.78)
	1	1 PM	112.22	(30.17)	103.89	(52.93)	8.89	(7.29)
	2	1 AM	132.00	(83.90)	99.44	(32.69)	1.00	(8.00)
	2	1 PM	135.78	(79.00)	93.44	(52.13)	1.78	(5.33)
	1	2 AM	124.33	(50.24)	45.00	(30.69)	1.33	(2.70)
	1	2 PM	125.67	(55.96)	40.00	(21.66)	1.89	(5.67)
	2	2 AM	114.44	(74.68)	31.11	(12.64)	2.22	(4.97)
	2	2 PM	136.44	(89.11)	34.44	(24.96)	2.00	(4.69)
District B	1	1 AM	69.11	(52.95)	49.11	(14.40)	0.22	(0.44)
	1	1 PM	67.56	(62.37)	48.56	(15.62)	0.56	(0.88)
	2	1 AM	61.44	(41.98)	33.78	(19.73)	0.11	(0.33)
	2	1 PM	62.11	(47.78)	24.78	(17.11)	0.00	(0.00)
	1	2 AM	35.56	(26.18)	30.56	(12.12)	0.11	(0.33)
	1	2 PM	33.67	(19.66)	24.44	(17.36)	0.00	(0.00)
	2	2 AM	82.56	(71.78)	19.56	(18.41)	0.00	(0.00)
	2	2 PM	79.89	(59.43)	25.78	(16.05)	0.11	(0.33)
	1	3 AM	72.89	(64.72)	43.11	(28.34)	0.44	(1.33)
	1	3 PM	69.33	(50.67)	28.89	(25.01)	1.00	(2.00)
	2	3 AM	101.11	(65.83)	17.67	(12.88)	0.00	(0.00)
	2	3 PM	110.33	(71.73)	20.33	(14.04)	0.00	(0.00)
District C	1	1	22.00	(27.46)	75.78	(29.31)	0.33	(0.71)
	2	1	15.11	(12.32)	110.22	(41.35)	1.11	(3.33)
	1	2	37.11	(17.99)	91.67	(35.97)	0.56	(1.13)
	2	2	27.89	(19.34)	81.89	(21.30)	0.11	(0.33)
	1	3	30.56	(17.10)	58.89	(32.47)	1.00	(1.41)
	2	3	41.11	(22.92)	68.78	(24.87)	0.00	(0.00)

Note. N = 26 classes, 2 cohorts.

Table 3

Kindergarten Teachers' Time and Interactions During Story Reading

			Minutes Spent in Story Reading		Interactions During Story Reading			
					Scriptal		Text-Tied	
District A	Cohort	Teacher	M	(SD)	M	(SD)	M	(SD)
	1	1 AM	4.89	(5.23)	1.11	(1.54)	3.89	(7.10)
	1	1 PM	6.78	(4.32)	3.89	(5.88)	13.11	(23.22)
	2	1 AM	7.00	(5.65)	6.22	(6.28)	10.11	(10.89)
	2	1 PM	4.67	(7.05)	3.00	(5.05)	5.33	(8.73)
	1	2 AM	4.00	(3.35)	0.33	(0.71)	0.11	(0.33)
	1	2 PM	7.00	(5.36)	2.00	(3.57)	0.55	(1.67)
	2	2 AM	4.56	(4.85)	0.22	(0.67)	0.00	(0.00)
	2	2 PM	3.67	(4.36)	0.33	(1.00)	0.00	(0.00)
District B	1	1 AM	11.56	(4.56)	3.11	(2.09)	3.11	(3.44)
	1	1 PM	9.67	(6.00)	3.00	(2.60)	2.33	(3.00)
	2	1 AM	9.00	(5.92)	1.00	(1.94)	0.22	(0.67)
	2	1 PM	9.22	(3.42)	0.22	(0.44)	2.11	(5.60)
	1	2 AM	6.78	(5.36)	5.22	(10.92)	0.78	(2.33)
	1	2 PM	3.67	(4.47)	1.67	(4.00)	0.44	(1.01)
	2	2 AM	3.78	(4.76)	0.56	(1.67)	0.11	(0.33)
	2	2 PM	2.67	(5.02)	1.11	(3.33)	1.11	(3.33)
	1	3 AM	3.33	(5.00)	0.11	(0.33)	0.11	(0.33)
	1	3 PM	5.44	(4.69)	0.33	(0.71)	3.00	(6.20)
	2	3 AM	4.22	(5.33)	0.78	(2.33)	0.89	(2.31)
	2	3 PM	2.33	(3.50)	0.44	(1.33)	0.22	(0.67)
District C	1	1	30.78	(8.84)	9.11	(6.68)	30.22	(17.48)
	2	1	14.89	(7.17)	11.11	(9.45)	10.89	(8.21)
	1	2	31.44	(13.68)	8.22	(9.02)	25.89	(17.54)
	2	2	28.00	(11.13)	5.67	(4.21)	13.00	(6.60)
	1	3	14.44	(5.70)	3.78	(4.74)	10.56	(7.38)
	2	3	16.22	(12.54)	5.67	(5.12)	10.44	(12.90)

Note. N = 26, 2 cohorts.

Table 4

First Grade Instructional Time

			Minutes Spent in:			
			Reading		All Instruction	
District A	Cohort	Teacher	M	(SD)	M	(SD)
	1	1	38.67	(21.73)	95.89	(42.32)
	2	1	30.00	(18.20)	64.67	(24.83)
	1	2	51.00	(19.35)	84.67	(27.06)
	2	2	33.22	(16.92)	64.22	(23.81)
	1	3	25.00	(20.03)	121.22	(31.14)
	2	3	50.33	(13.09)	109.56	(27.26)
	1	4	60.56	(17.23)	132.22	(21.83)
	2	4	59.89	(15.24)	113.11	(26.34)
District B	1	1	42.67	(12.31)	99.33	(28.67)
	2	1	42.78	(15.02)	89.11	(31.70)
	1	2	38.56	(15.42)	123.44	(35.76)
	2	2	42.44	(23.39)	90.78	(30.73)
	1	3	45.11	(17.60)	87.22	(23.33)
	2	3	37.13	(14.55)	67.50	(25.78)
	1	4	41.67	(12.11)	120.33	(45.29)
	2	4	41.44	(19.72)	93.67	(28.07)
	1	5	36.00	(11.75)	124.67	(27.98)
	2	5	40.33	(11.29)	127.67	(22.15)
	1	6	27.11	(11.83)	112.89	(35.11)
	2	6	36.00	(16.58)	79.44	(10.91)
District C	1	1	44.25	(12.14)	92.13	(40.12)
	2	1	41.44	(26.08)	107.56	(20.06)
	1	2	42.00	(32.16)	103.44	(41.74)
	2	2	26.44	(25.44)	105.56	(37.79)

Note. N = 24 classes, 2 cohorts.

Table 5

First Grade Reading Instruction: Decoding, Scriptal, Text-Tied, and Story Grammar Interactions

District A	Cohort	Teacher	Decoding		Scriptal		Text-Tied		Story Grammar	
			M	(SD)	M	(SD)	M	(SD)	M	(SD)
	1	1	205.78	(79.44)	40.89	(18.37)	34.67	(15.07)	17.78	(18.50)
	2	1	210.44	(108.89)	34.78	(22.88)	26.44	(9.57)	8.56	(7.94)
	1	2	286.89	(102.24)	21.22	(19.34)	25.22	(26.30)	1.11	(2.42)
	2	2	249.56	(74.44)	22.78	(19.57)	17.67	(15.03)	8.67	(13.57)
	1	3	181.56	(80.51)	29.56	(17.98)	21.56	(11.00)	8.00	(10.40)
	2	3	277.00	(77.92)	68.00	(27.39)	55.33	(37.49)	10.11	(12.37)
	1	4	447.89	(87.57)	52.56	(23.13)	48.33	(15.88)	18.56	(15.60)
	2	4	455.11	(123.30)	69.44	(30.69)	37.00	(21.93)	19.78	(9.59)
District B	1	1	323.43	(94.68)	35.29	(25.53)	42.57	(27.57)	42.57	(23.08)
	2	1	339.67	(77.76)	35.44	(17.57)	48.00	(18.85)	35.22	(20.27)
	1	2	254.00	(79.81)	57.44	(37.62)	74.44	(19.04)	26.56	(14.09)
	2	2	266.00	(66.95)	47.67	(30.94)	73.37	(50.40)	13.89	(18.98)
	1	3	237.33	(83.50)	35.11	(31.47)	41.78	(18.63)	8.44	(7.11)
	2	3	249.88	(138.81)	90.38	(35.13)	14.38	(9.32)	2.00	(2.45)
	1	4	217.22	(63.19)	45.78	(17.44)	65.22	(17.56)	23.89	(16.69)
	2	4	183.22	(59.28)	51.11	(37.21)	46.78	(19.29)	23.44	(26.06)
	1	5	271.33	(72.48)	45.56	(24.28)	72.78	(36.49)	11.33	(10.91)
	2	5	280.22	(77.25)	87.11	(41.07)	53.44	(24.45)	13.22	(18.80)
	1	6	141.67	(37.53)	56.67	(26.63)	66.56	(22.82)	5.44	(10.45)
	2	6	211.00	(60.74)	66.67	(34.69)	56.89	(25.08)	11.67	(14.84)
District C	1	1	163.62	(90.14)	110.38	(65.25)	57.38	(39.12)	8.62	(9.10)
	2	1	127.56	(91.94)	57.00	(30.45)	44.89	(25.34)	19.78	(20.72)
	1	2	79.44	(47.87)	42.11	(21.67)	34.22	(17.18)	0.78	(2.33)
	2	2	162.00	(61.94)	42.78	(23.03)	46.89	(22.99)	3.78	(6.72)

Note. N = 24 classes, 2 cohorts

Table 6

Correlations of AM/PM or Year to Year from Decoding, Scriptal, Text-Tied, and Story Grammar Interactions for Half-Day or Whole-Day Kindergarten and First Grade Teachers

	Decoding	Scriptal	Text-Tied	Scriptal Text-Tied	Story Grammar
K, AM/PM	.96	---	---	.94	.92
K, YR/YR	.84	---	---	.89	.55
1st GRADE YR/YR	.88	.15	.61	---	.80

Note. All underlined correlations are significant $p = < .001$.

Table 7

First Grade Teachers' Time and Interactions During Story Reading

			Minutes Spent in Story Reading		Interactions During Story Reading			
					Scriptal		Text-Tied	
District A	Cohort	Teacher	M	(SD)	M	(SD)	M	(SD)
	1	1	2.89	(3.76)	1.78	(4.32)	0.44	(0.88)
	2	1	5.22	(5.95)	0.44	(1.33)	3.33	(5.63)
	1	2	12.11	(11.11)	2.56	(5.59)	1.11	(2.32)
	2	2	8.89	(9.60)	3.78	(6.98)	0.67	(1.00)
	1	3	2.11	(2.71)	0.33	(1.00)	0.56	(1.67)
	2	3	5.44	(4.90)	0.44	(0.73)	2.67	(4.50)
	1	4	6.44	(6.77)	1.56	(3.43)	2.00	(5.60)
	2	4	4.22	(6.44)	1.33	(4.00)	3.22	(5.33)
District B	1	1	4.44	(8.13)	0.00	(0.00)	0.11	(0.33)
	2	1	8.56	(7.45)	0.89	(1.27)	3.22	(3.96)
	1	2	9.67	(6.22)	3.00	(7.18)	7.00	(6.38)
	2	2	12.44	(10.39)	3.11	(6.57)	11.44	(18.57)
	1	3	16.44	(7.40)	2.22	(2.49)	3.44	(5.41)
	2	3	20.25	(9.07)	11.75	(23.11)	0.13	(0.35)
	1	4	15.89	(8.24)	4.56	(4.72)	3.44	(3.68)
	2	4	26.22	(8.60)	7.44	(13.95)	5.22	(6.92)
	1	5	18.67	(14.25)	3.00	(3.28)	5.00	(4.27)
	2	5	14.44	(6.60)	2.67	(4.82)	3.33	(4.56)
	1	6	9.44	(6.28)	1.89	(2.71)	2.00	(2.55)
	2	6	20.67	(8.51)	5.33	(6.26)	8.56	(10.28)
	1	4	8.67	(3.16)	2.22	(3.80)	2.11	(3.44)
District C	1	1	6.25	(13.49)	7.13	(19.36)	1.00	(1.77)
	2	1	6.22	(10.71)	3.78	(8.84)	0.22	(0.67)
	1	2	8.44	(15.32)	3.33	(6.58)	2.00	(3.04)
	2	2	12.33	(8.43)	5.67	(6.95)	6.22	(9.13)

Note. N = 24 classes, 2 cohorts

Figure 1

CATEGORIES AND CODES

ACTIVITIES

10 Non-Instructional Time
11 snack, lunch, rest, recess, bathrm.
12 free play (children choose)
13 open/close activities
14 transition

whole class 99
heterog 800
homog 900 higher # higher achiev.
4th digit 8 NOT meet daily
3rd digit # of groups
boys 2 girls 1

20-39 Teacher Directed Instruction
21 Art, Music, Cut & Paste, P.E.
22 Science
23 Decoding, NOT followed by written text
24 Math
25 Social Studies (incl. holidays)
26 Handwriting
27 Language
28 Decoding followed by written text
29 Reading (in a reading bk)
30 Workbook assignments
31 Teacher-Assigned-Centers
32 Show & Tell, News, Sharing
33 Adult Reading
34 Independent Wk. Preparation
35 Test taking Practice
36 Library
37 Spelling
38 Writing (Composition)
39 Language experience
40 Independent work
41 Sustained silent reading
42 indiv. child reads to class self-selected material

50 Other
51 movie, party, rehearsal, fire drill, etc.
52 testing

INTERACTIONS (all are teacher-initiated)

10-Text-Tied Comprehension
11 Background Knowledge
12 Vocabulary
13 Text Explicit — when adult reads
14 Text Implicit — when adult reads
15 Opinion
16 Sequencing, Prediction
17 Word Comprehension
18 Sentence Comp: TE — when child reads
19 Sentence Comp: TI — when child reads
20 Summary
21 Procedural Q's or Directives (instructional)
22 Paragraph Comp., Text Implicit

30 Story Grammar Referents
31 Setting: TE — narrative text when children reading
32 Plot: TE — narrative text when children reading
33 Character: TE — narrative text when children reading
34 Theme: TE — narrative text when children reading
35 Setting: TI — narrative text when children reading
36 Plot: TI — narrative text when children reading
37 Character: TI — narrative text when children reading
38 Theme: TI — narrative text when children reading

40 Other
41 General Probe
42 General Review
43 Correcting Work

50 Decoding
51 Letter sds (cons. and vowels)
52 Whole Word
53 Letter Naming, writing letters, cap, lc dist.
54 Spelling
55 Rhyming (oral task only)
56 Sounding Out Words
57 Sentence Reading
58 Paragraph Reading
59 Blending (oral task only)

60 Oral Language Development
61 Word Repetition
62 Phrase or Sent. Repetition
63 Word Production
64 Phrase or Sentence Production

70 Grammar
71 Parts of Speech
72 Usage/contractions/plurals/possessives
73 Capital Letters (as in proper nouns, etc.)
74 Punctuation/abbrev./alphabetize

81 Phonics Rules
82 Classification

86 Passage Reading longer than sentences

FEEDBACK

10 Lauds Task
11 Calls on Another, Ignores
12 Repeats, Reconfirms, Confirms
13 Negates
14 Repeats Question (same question same child)
15 T Models or Gives Answer
16 T Leads
17 Gives Rule
18 Encourages, Gives Hint
19 Homewk Assign/Written feedback
20 Quality Dependent
21 Asks for Explanation
22 Teacher Extends
23 Teacher Suggests re-examination

3/5/85

Figure 2

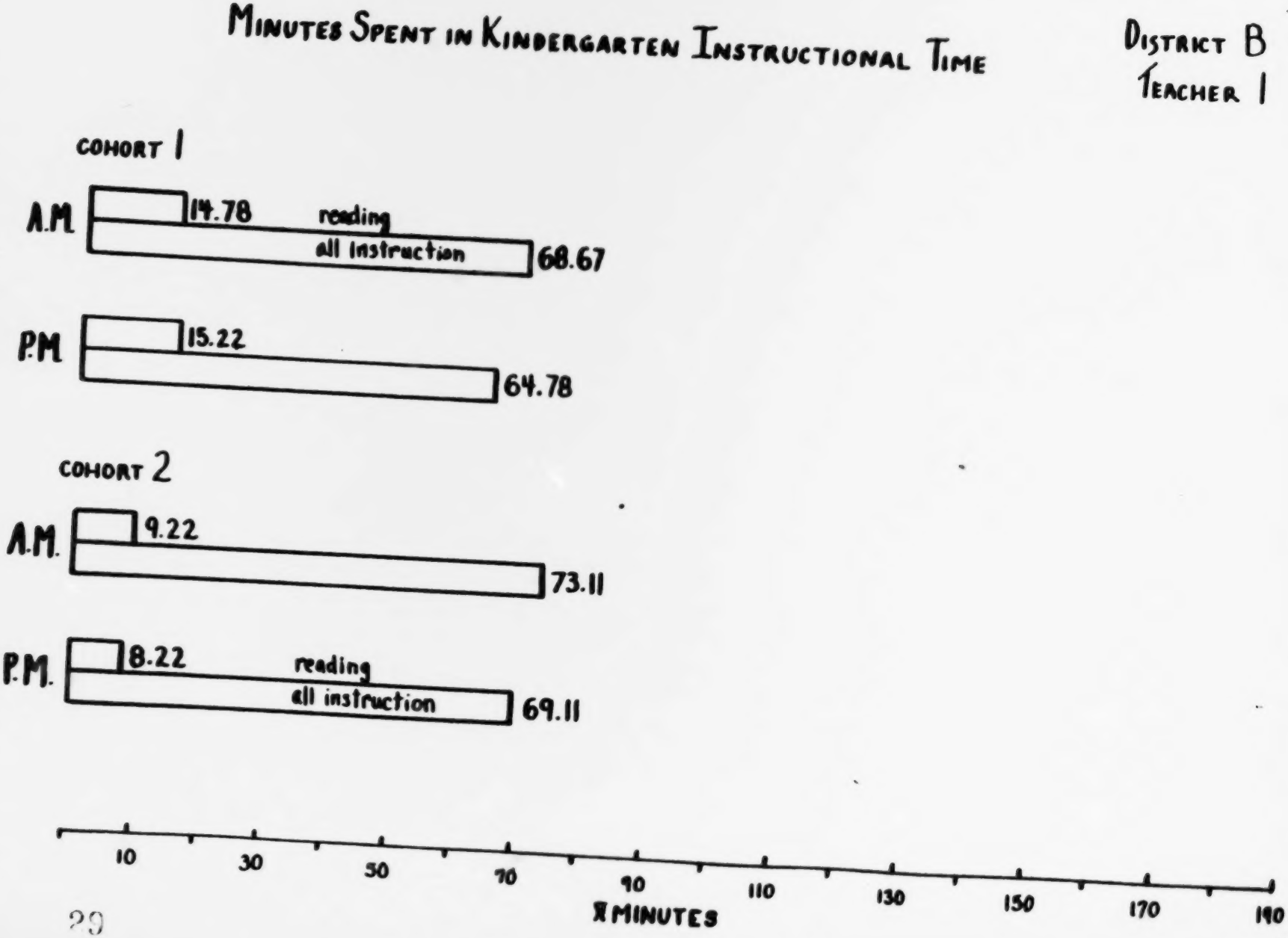

MINUTES SPENT IN KINDERGARTEN INSTRUCTIONAL TIME
DISTRICT B
TEACHER 1
COHORT 1
A.M.
14.78
reading
all instruction
68.67
P.M.
15.22
64.78
COHORT 2
A.M.
9.22
73.11
P.M.
8.22
reading
all instruction
69.11
10
30
50
70
90
110
130
150
170
190
X MINUTES

Figure 3

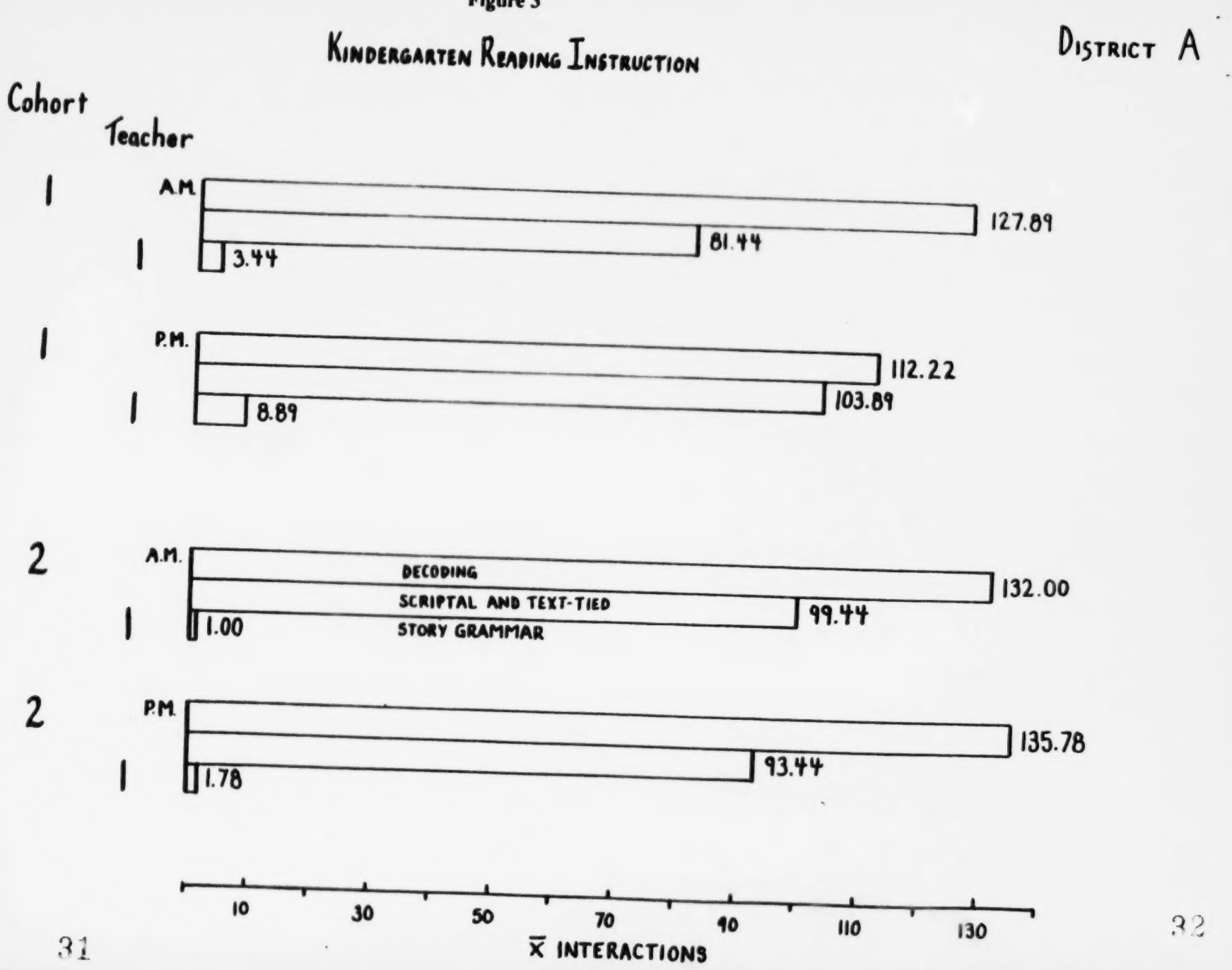

KINDERGARTEN READING INSTRUCTION
DISTRICT A
Cohort
Teacher
1
1
A.M.
3.44
81.44
127.89
1
1
P.M.
8.89
103.89
112.22
2
1
A.M.
1.00
DECODING
SCRIPTAL AND TEXT-TIED
STORY GRAMMAR
99.44
132.00
2
1
P.M.
1.78
93.44
135.78
10
30
50
70
90
110
130
X̄ INTERACTIONS

Figure 3, continued

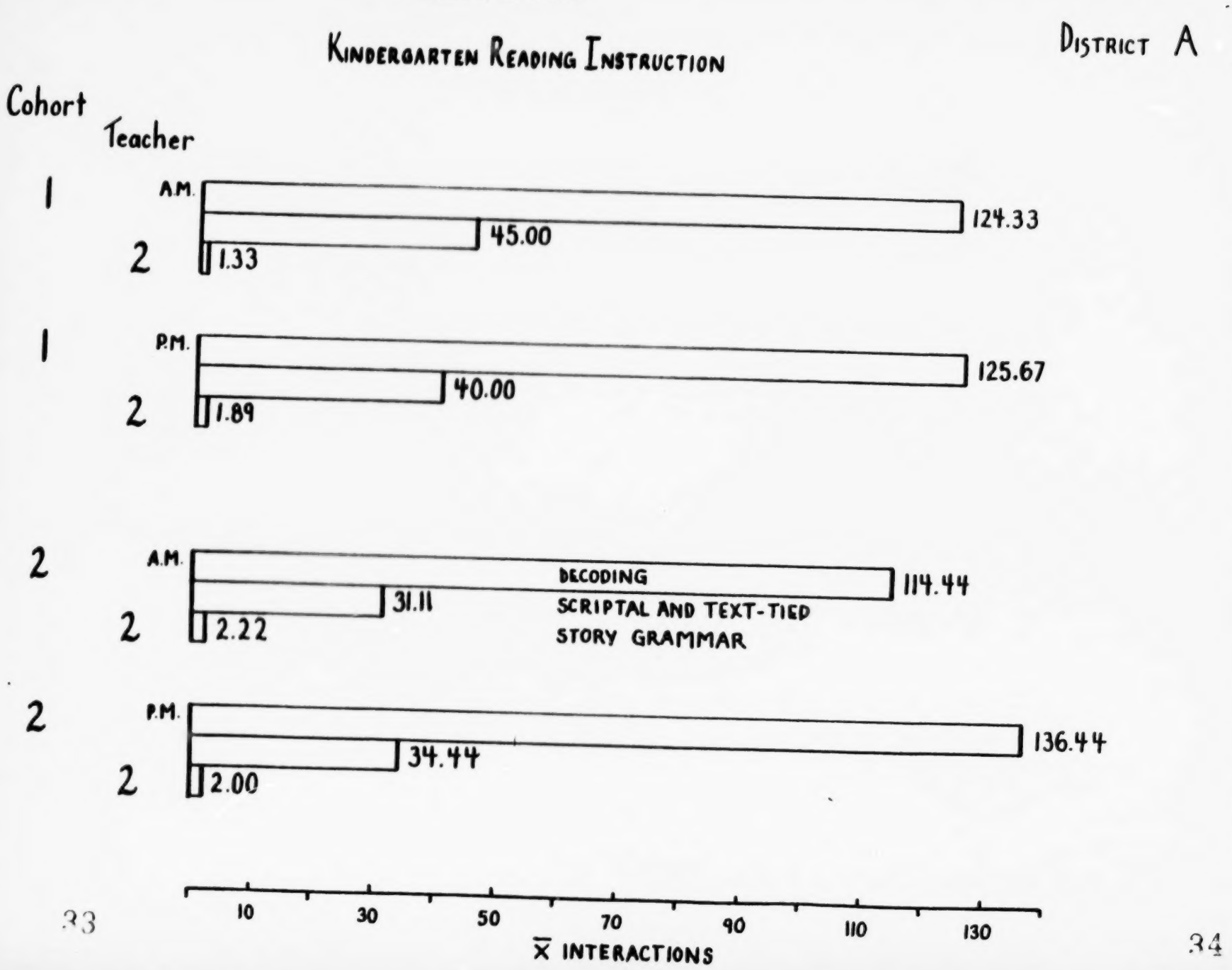


Figure 3, continued

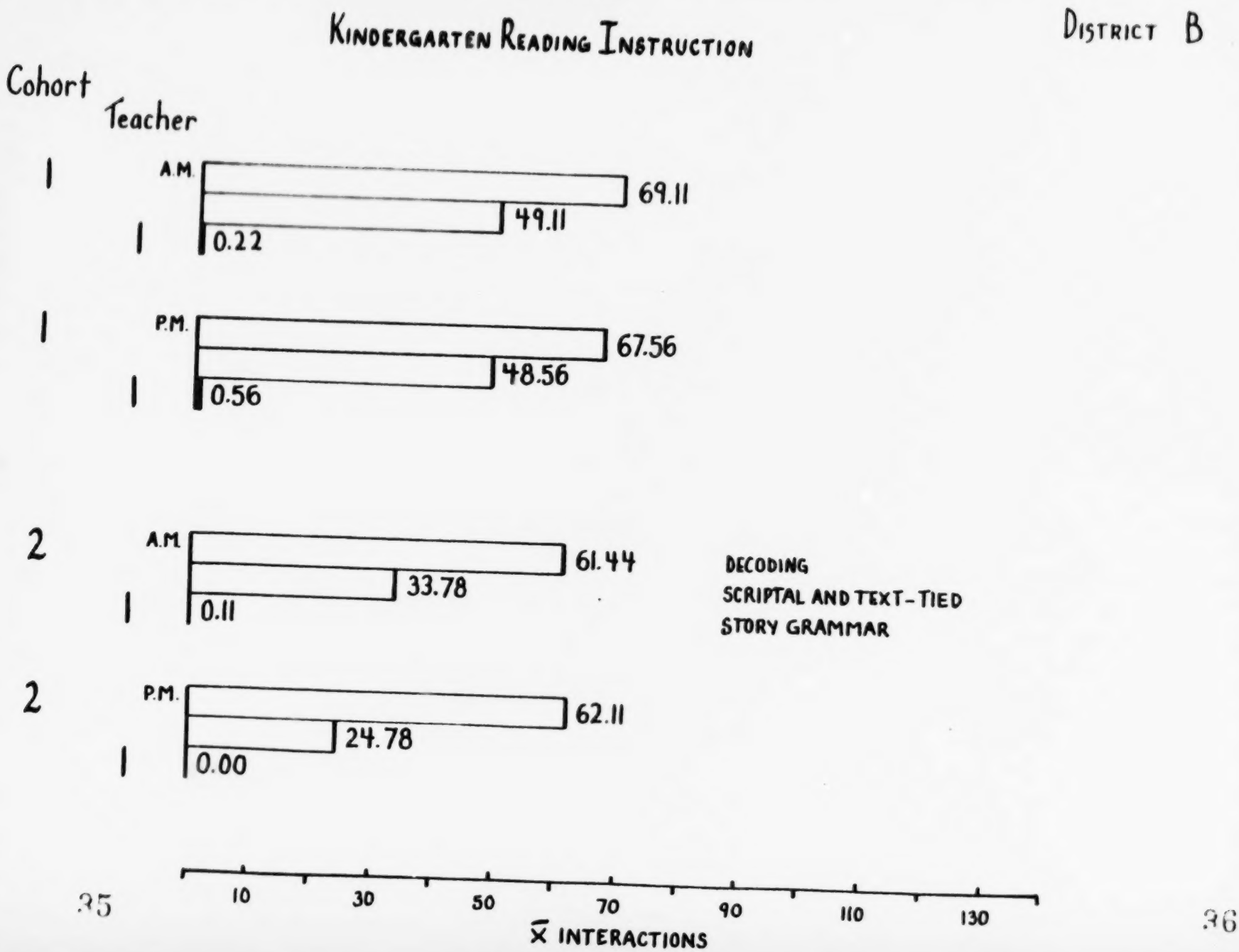


Figure 3, continued

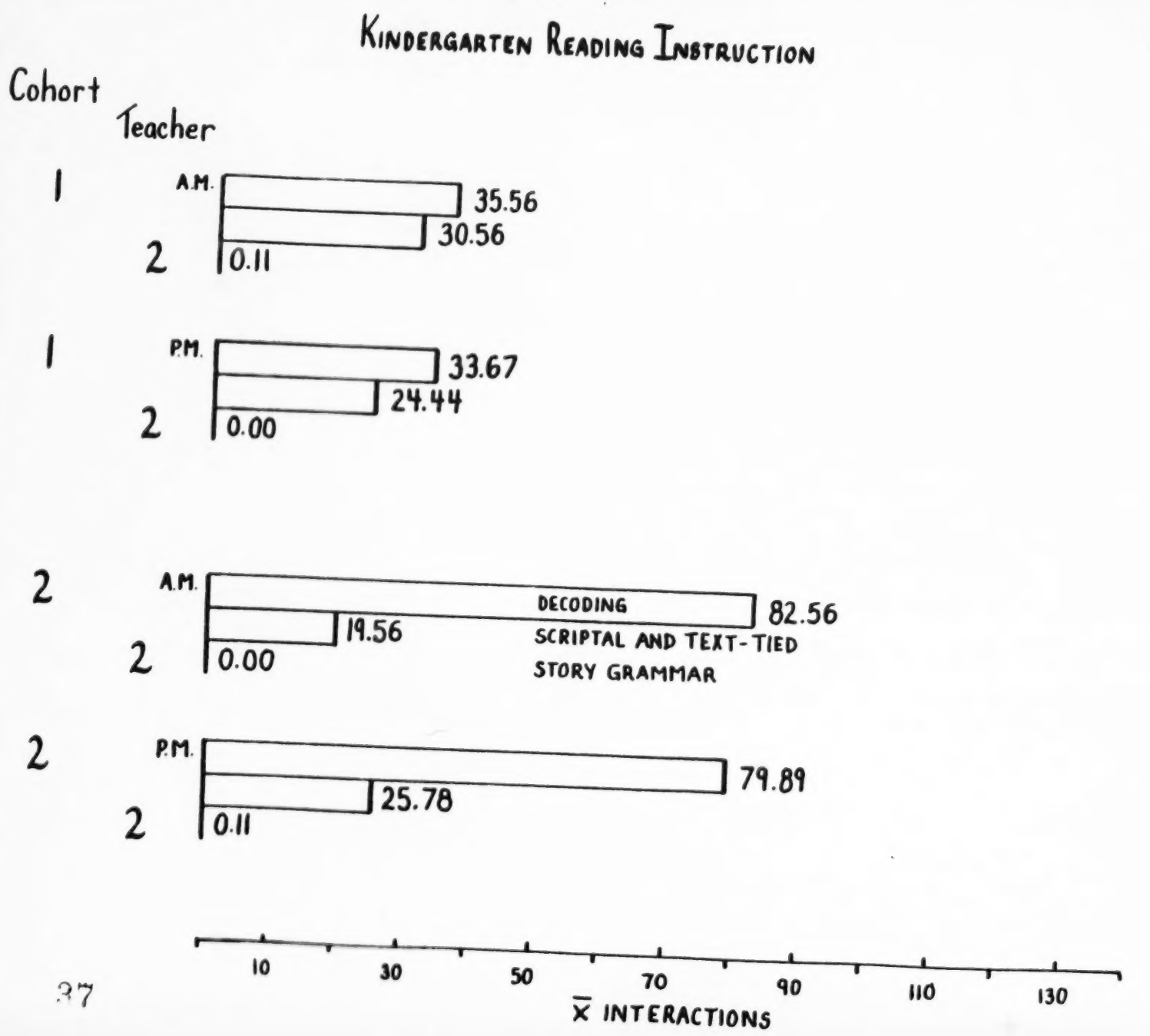


Figure 3, continued

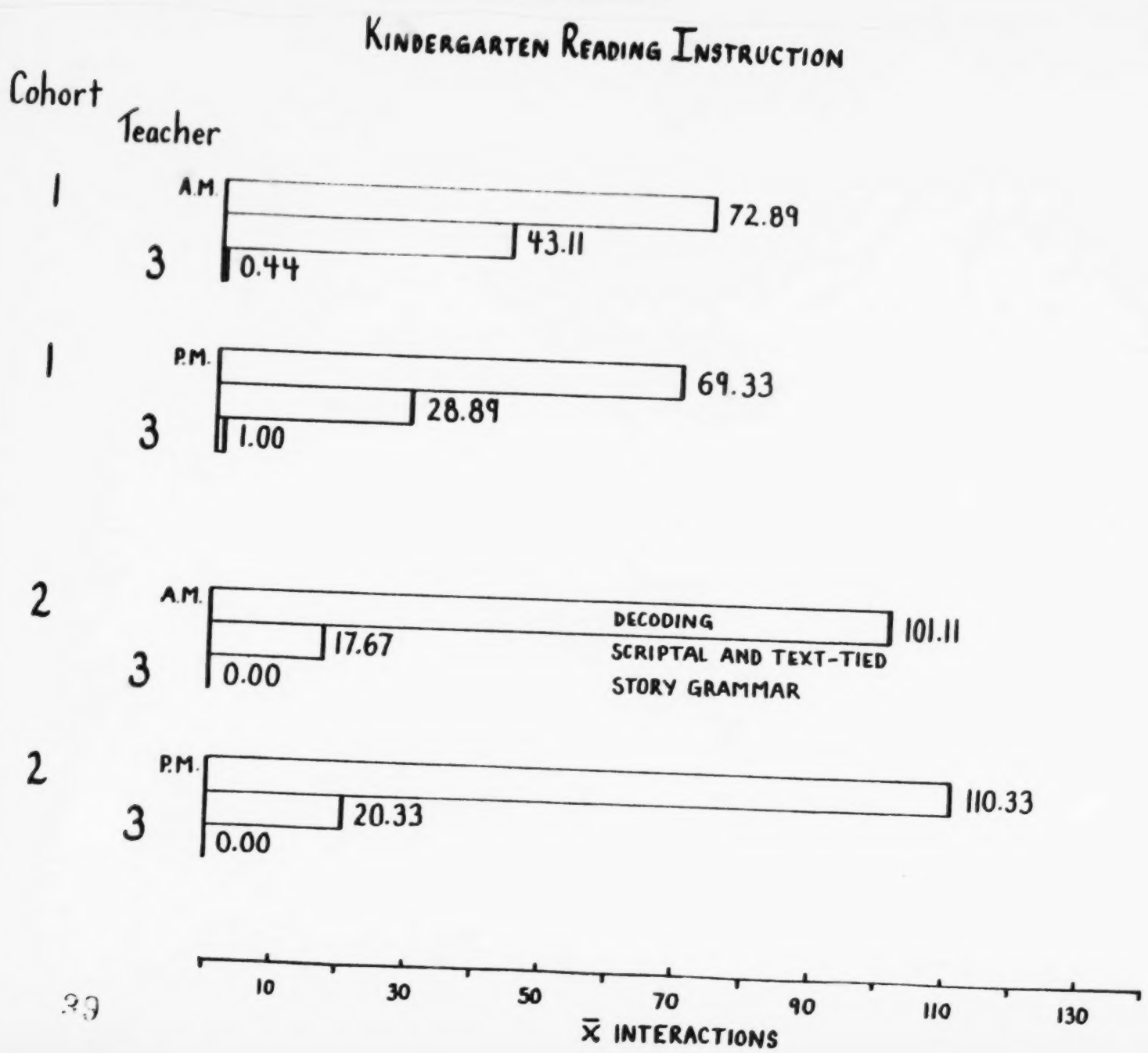


Figure 3, continued

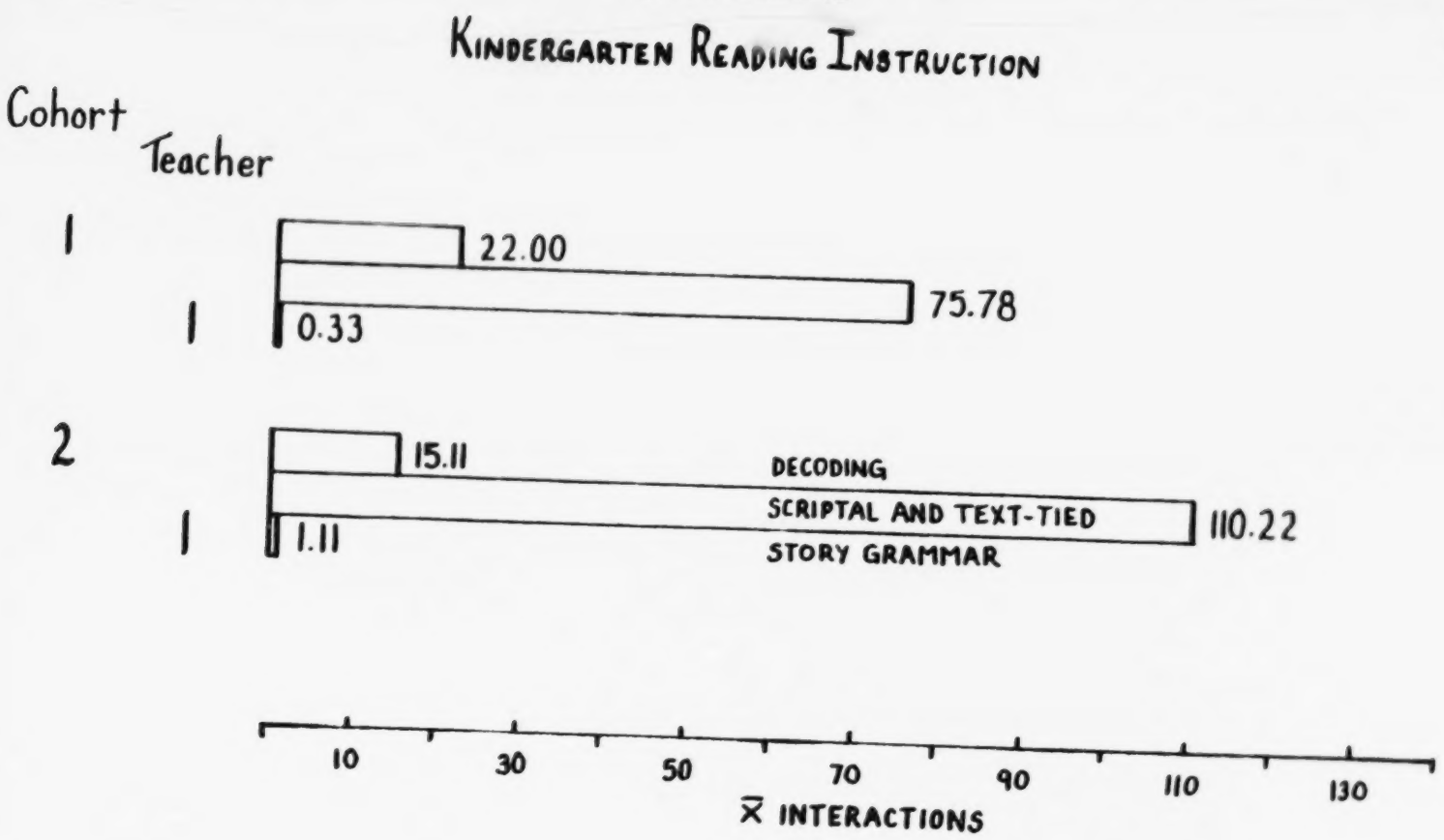


Figure 1, continued

KINDERGARTEN READING INSTRUCTION

DISTRICT C

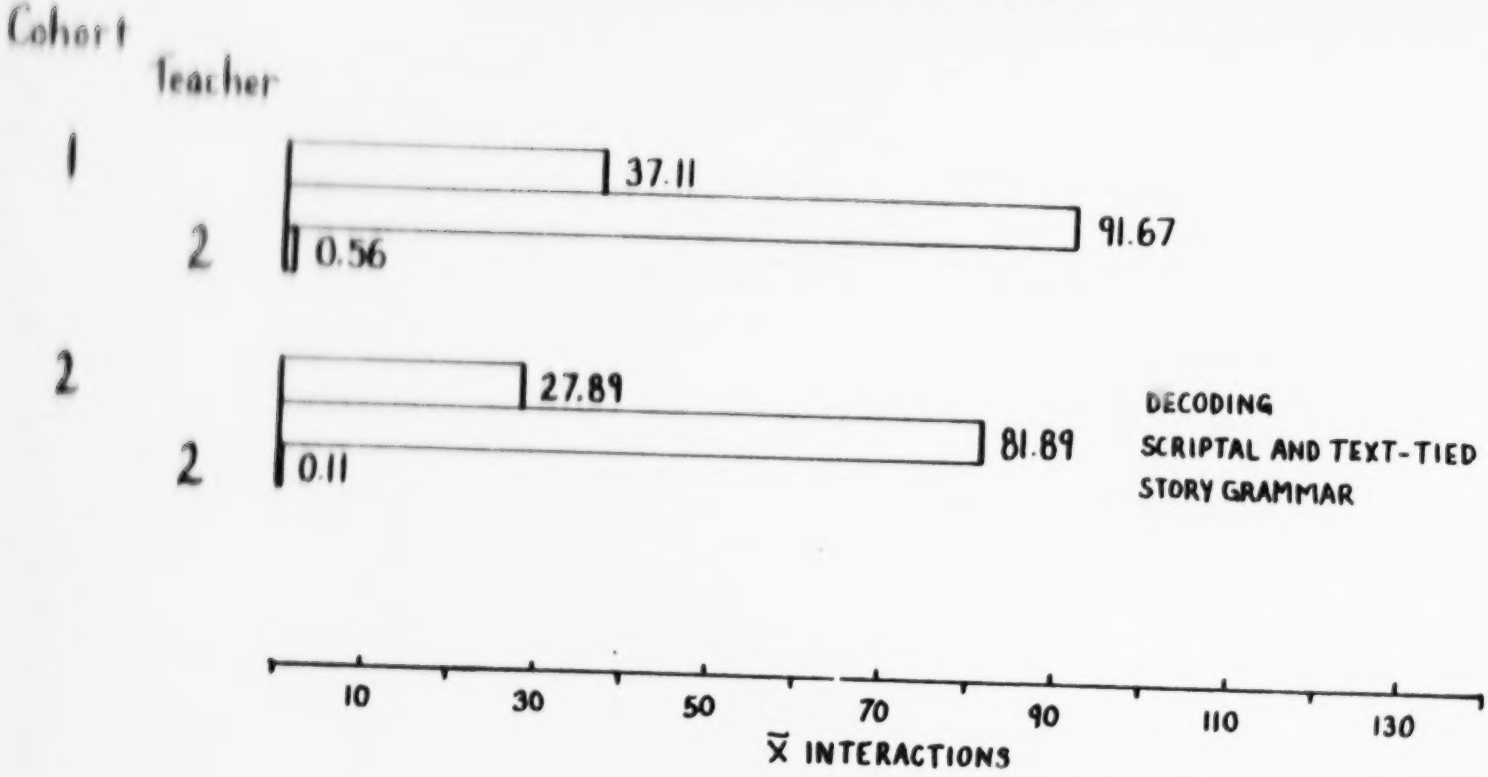


Figure 3, continued

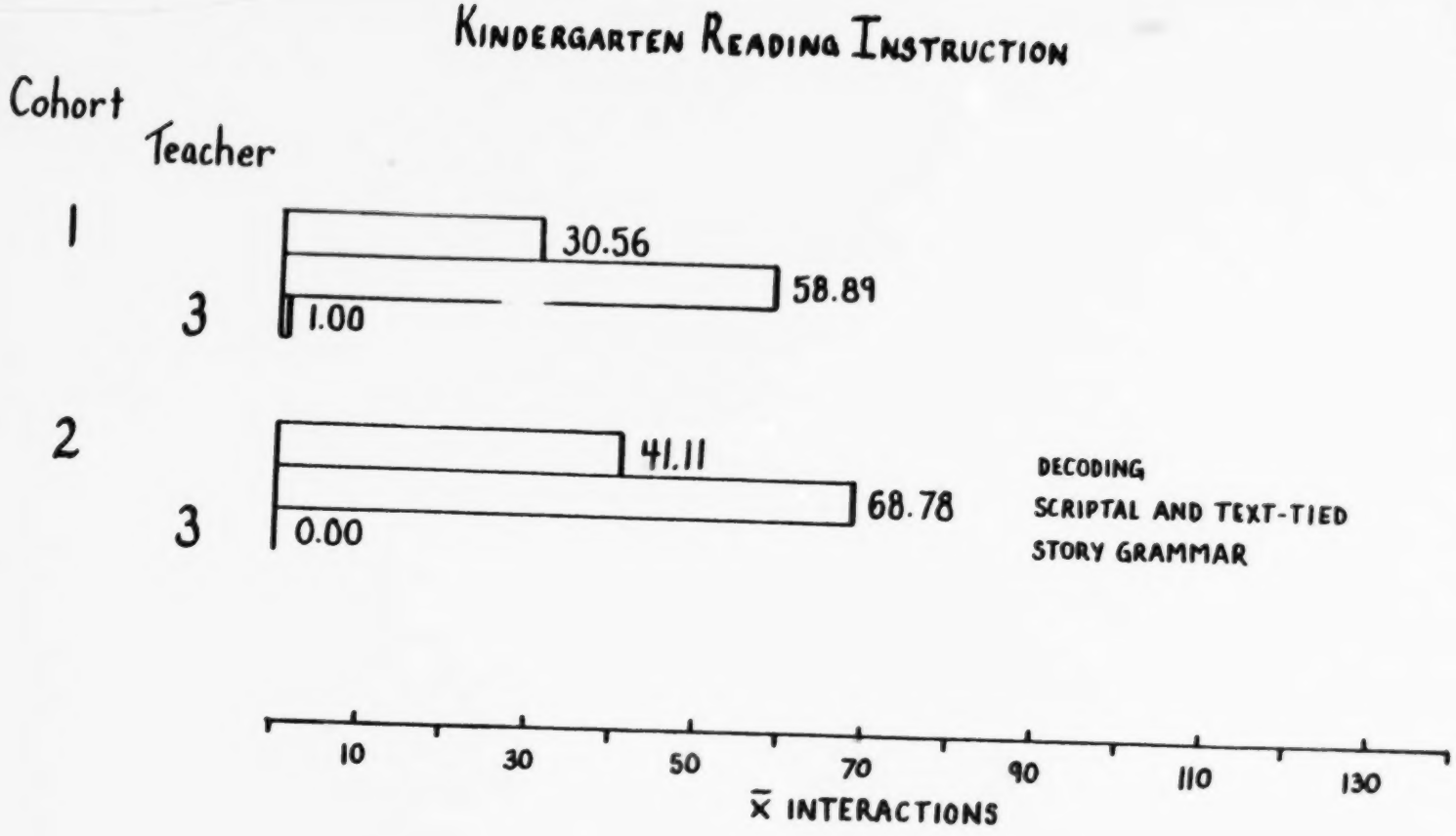
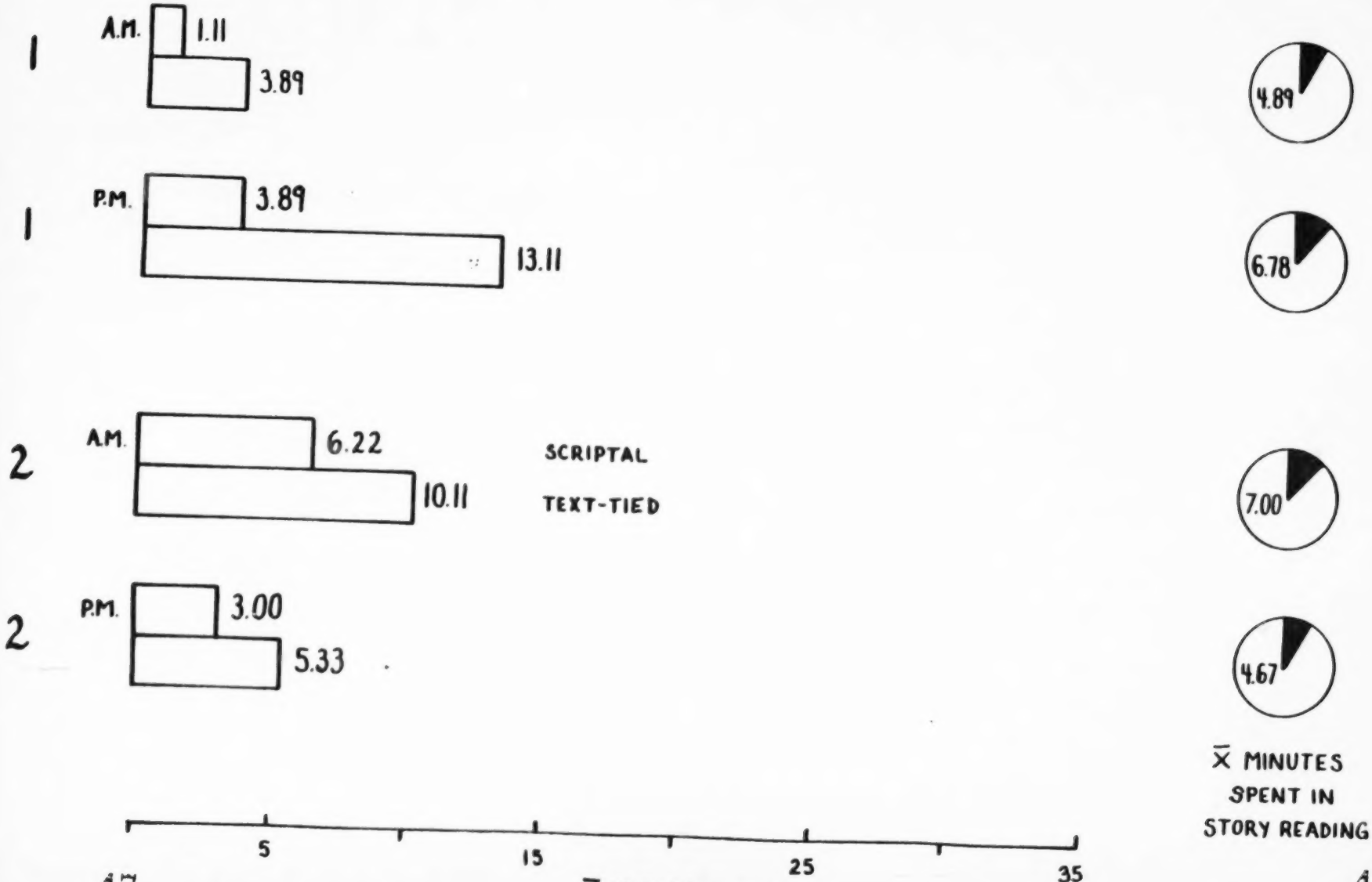


Figure 4

KINDERGARTEN TEACHER'S TIME AND INTERACTIONS DURING STORY READING

DISTRICT 'A'
TEACHER '1'

Cohort



P.M.

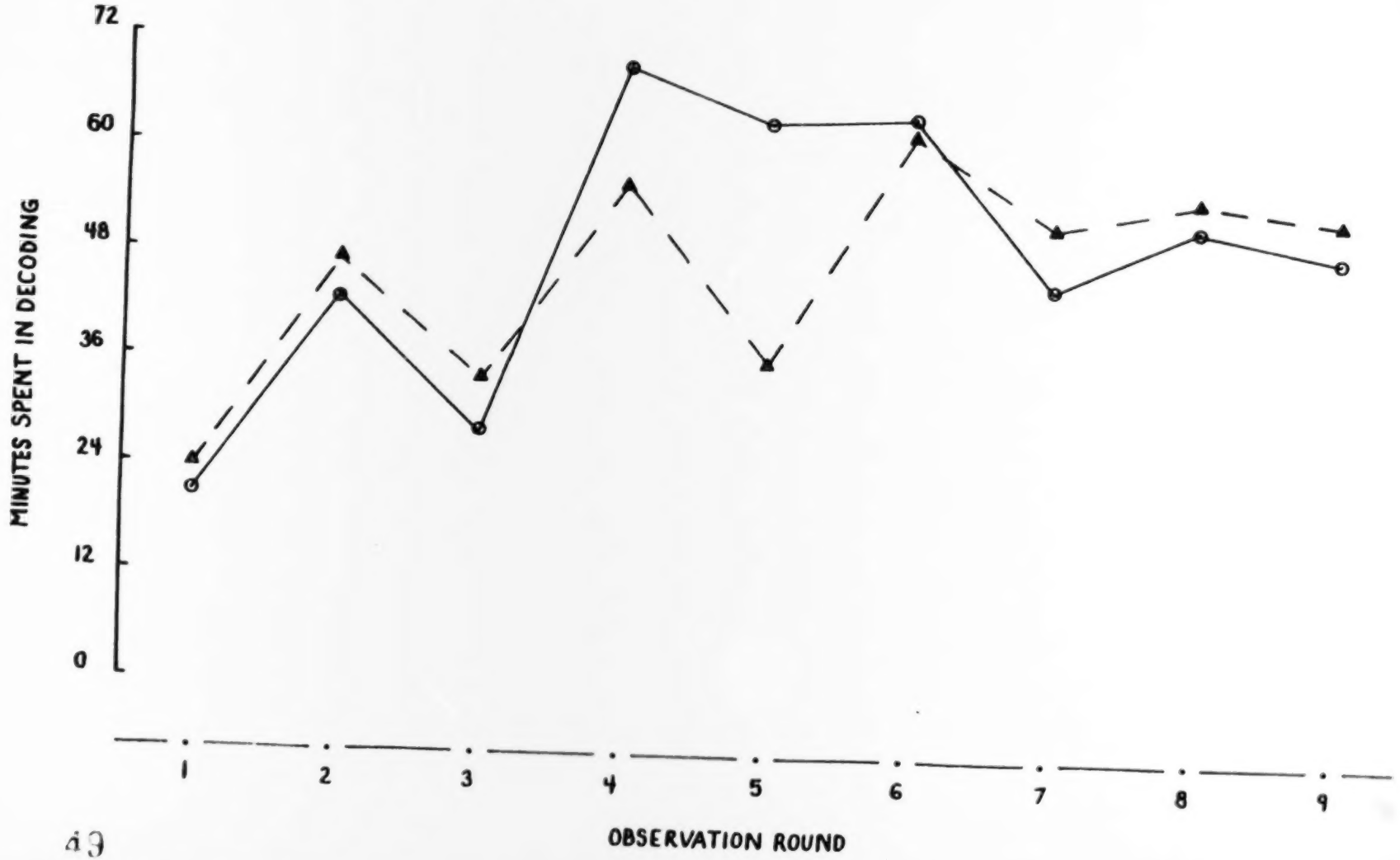
A.M.

Figure 5

Plots of District A Teachers' Minutes Allocated to Decoding

DISTRICT A

TEACHER 1



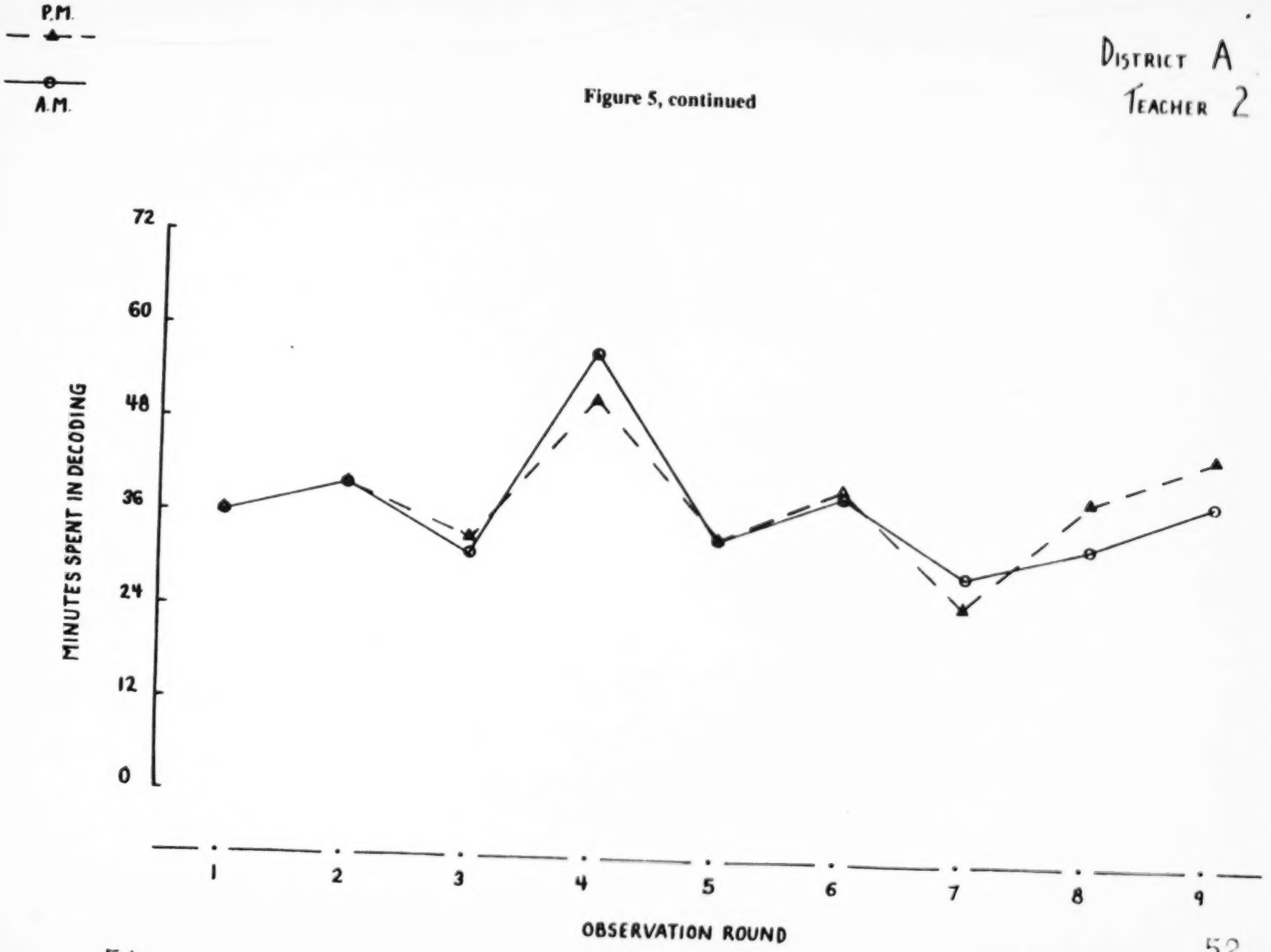
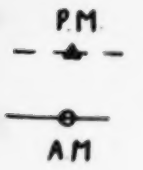


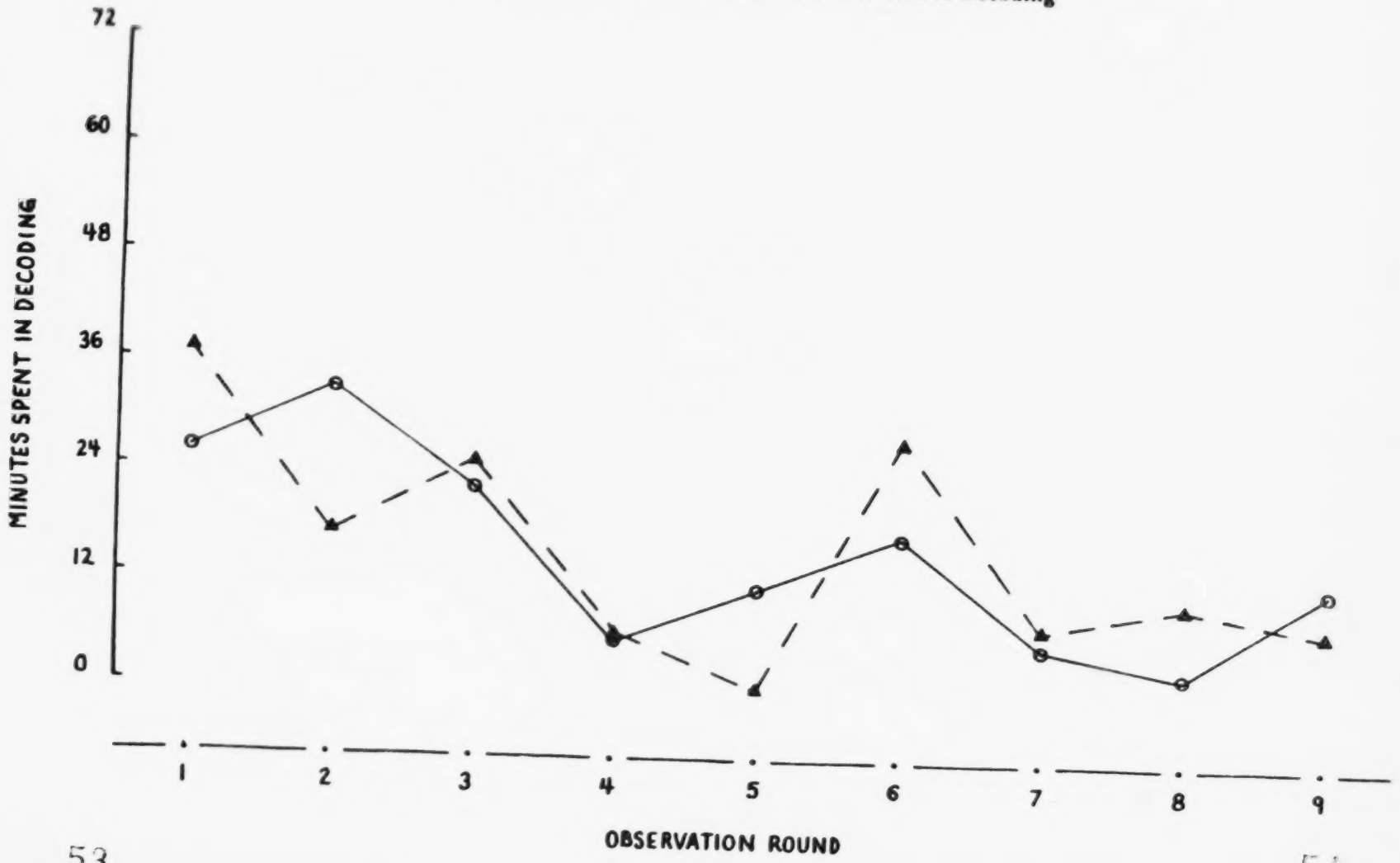
Figure 5, continued



DISTRICT B
TEACHER 1

Figure 6

Plots of District B Teachers' Minutes Allocated to Decoding

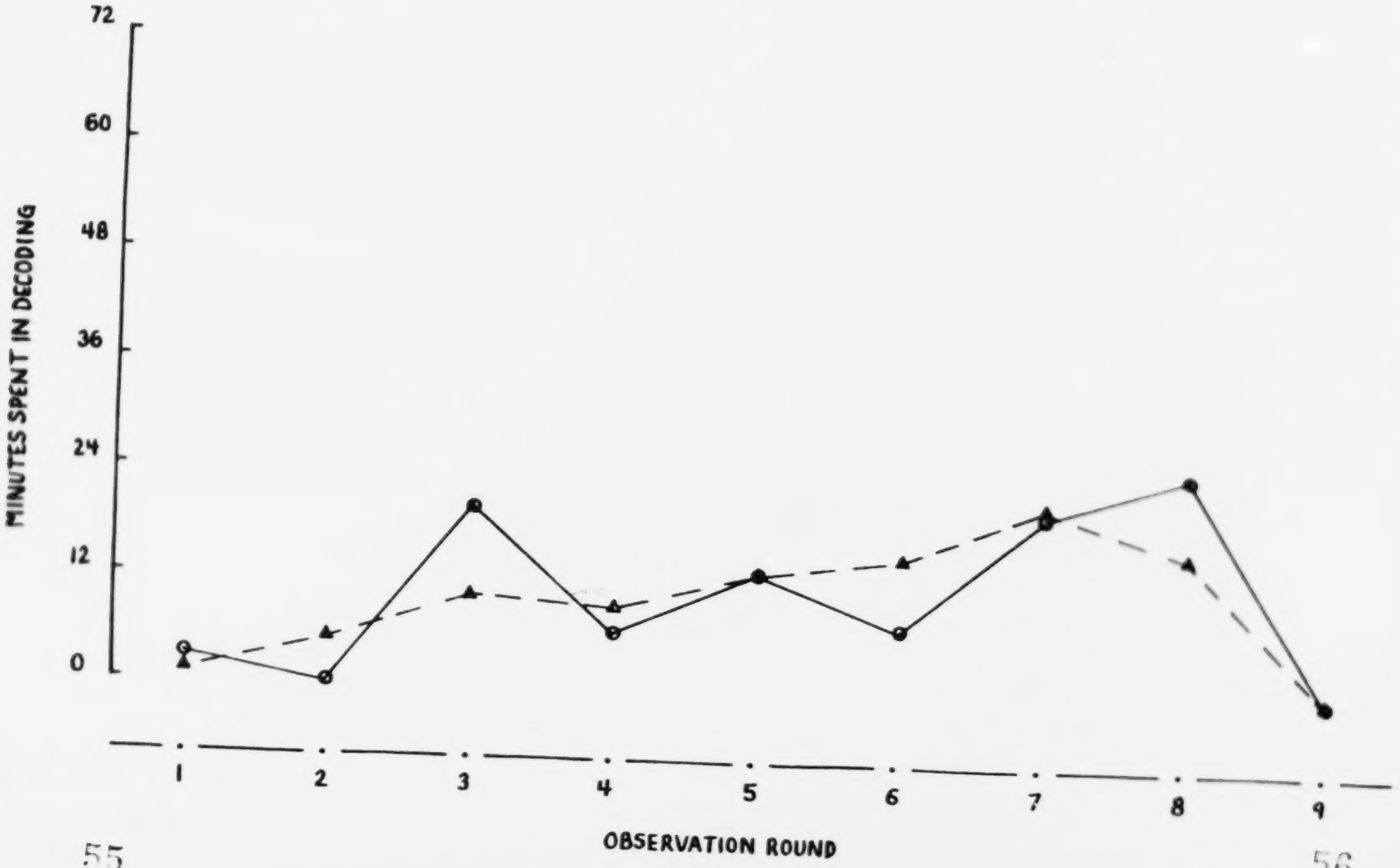


P.M.

A.M.

DISTRICT B.
TEACHER 2

Figure 6, continued

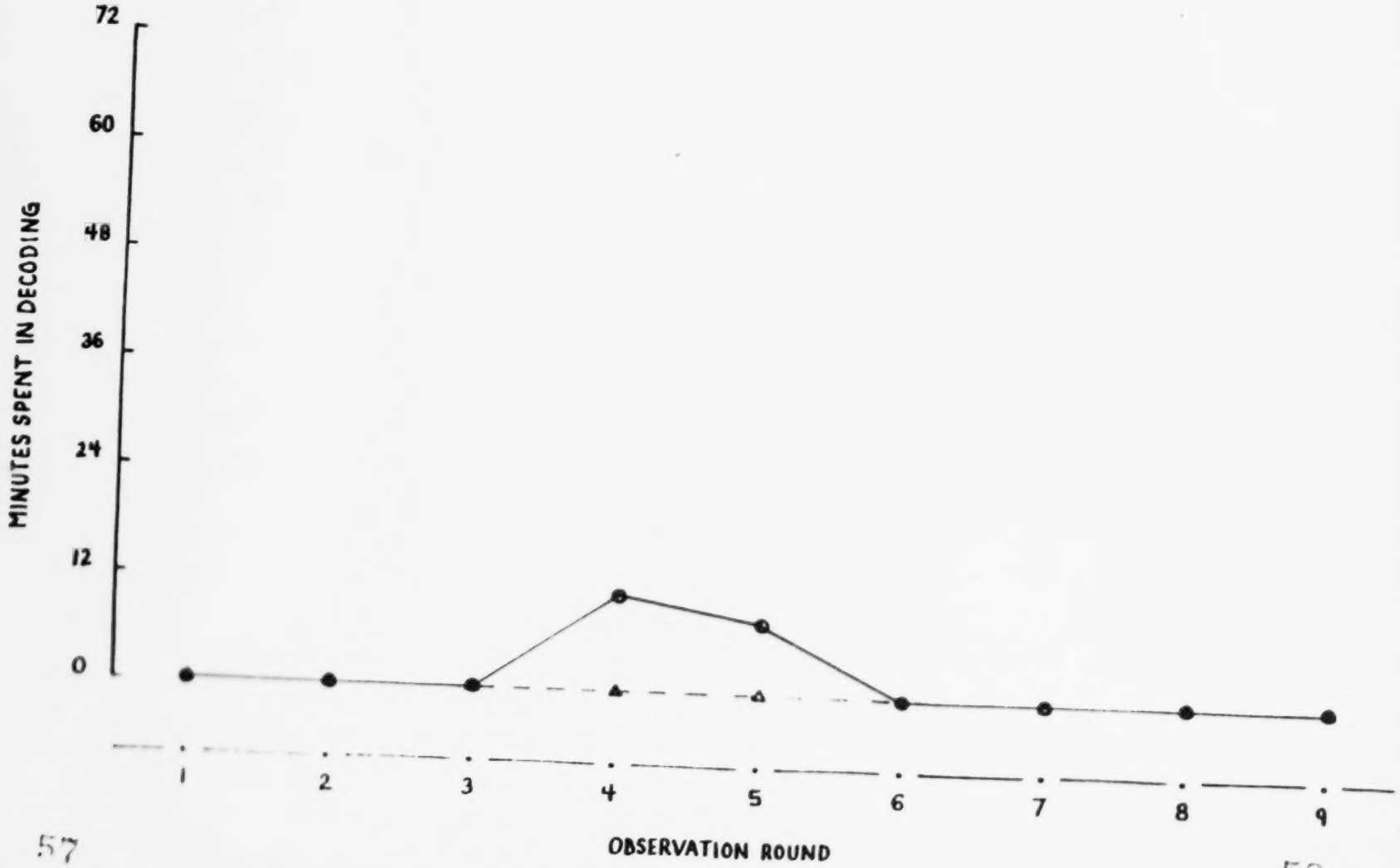


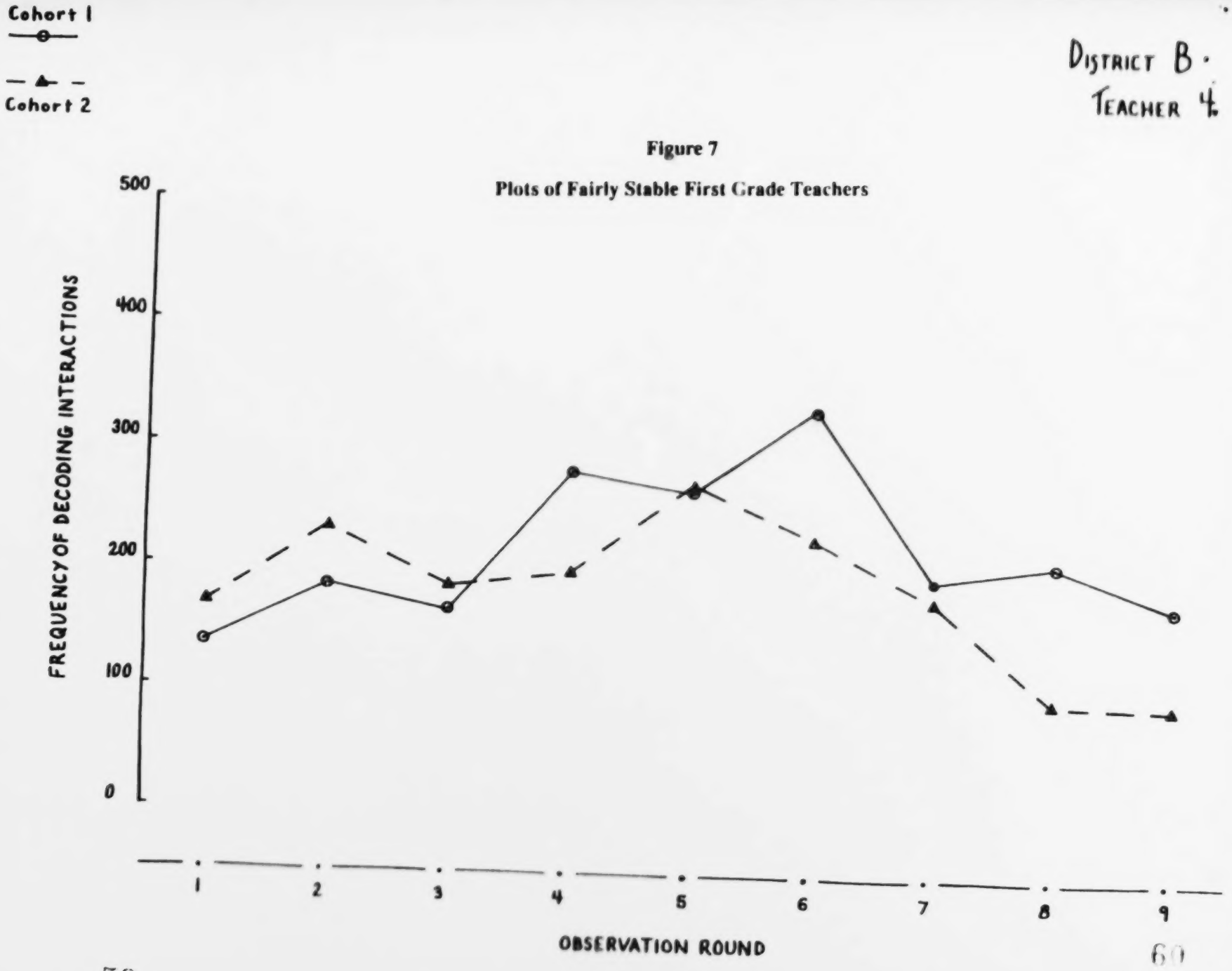
P.M.

A.M.

Figure 6, continued

DISTRICT B.
TEACHER 3




Cohort 1
Cohort 2
DISTRICT B.
TEACHER 4
Figure 7
Plots of Fairly Stable First Grade Teachers
FREQUENCY OF DECODING INTERACTIONS
500
400
300
200
100
0
1
2
3
4
5
6
7
8
9
OBSERVATION ROUND

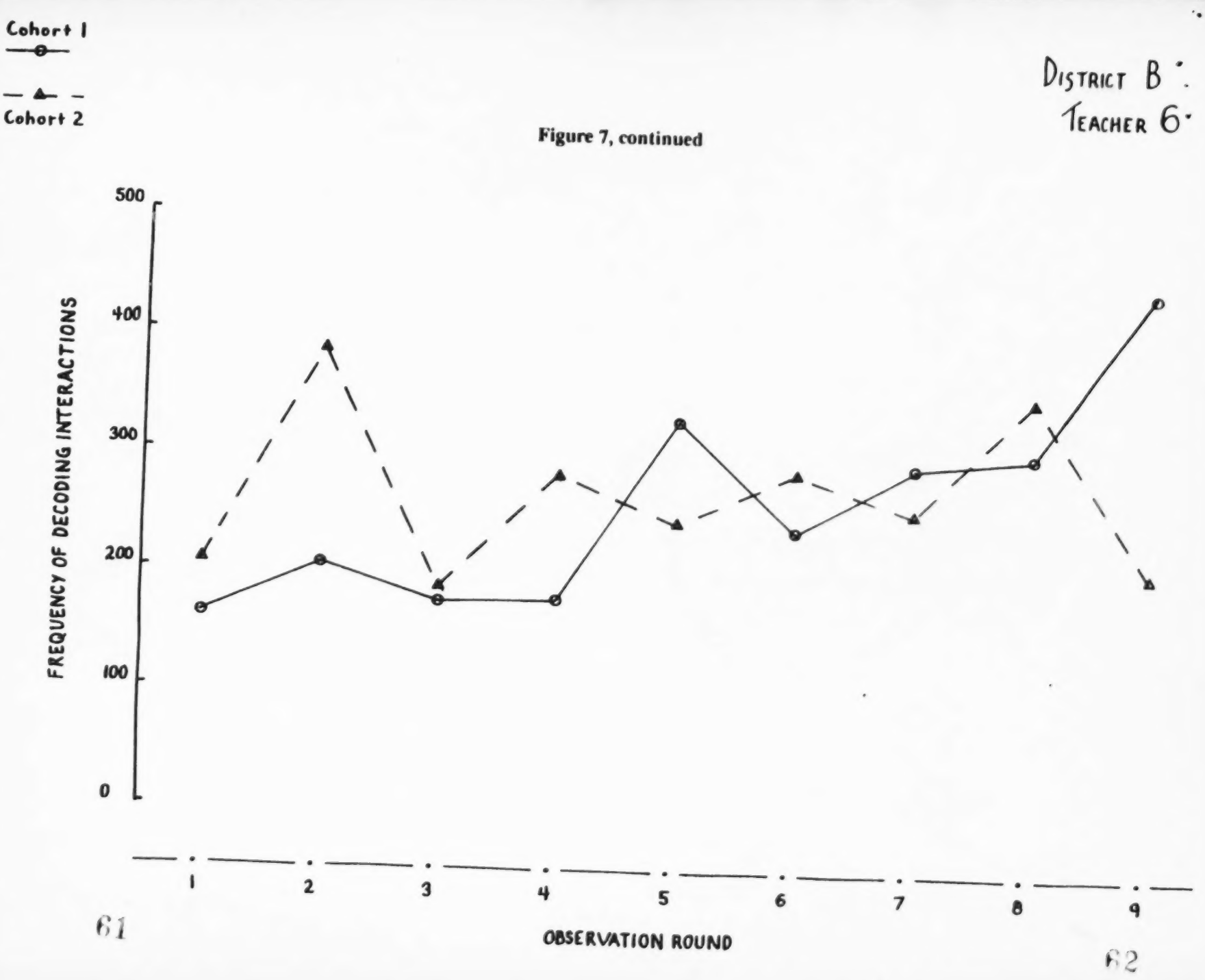
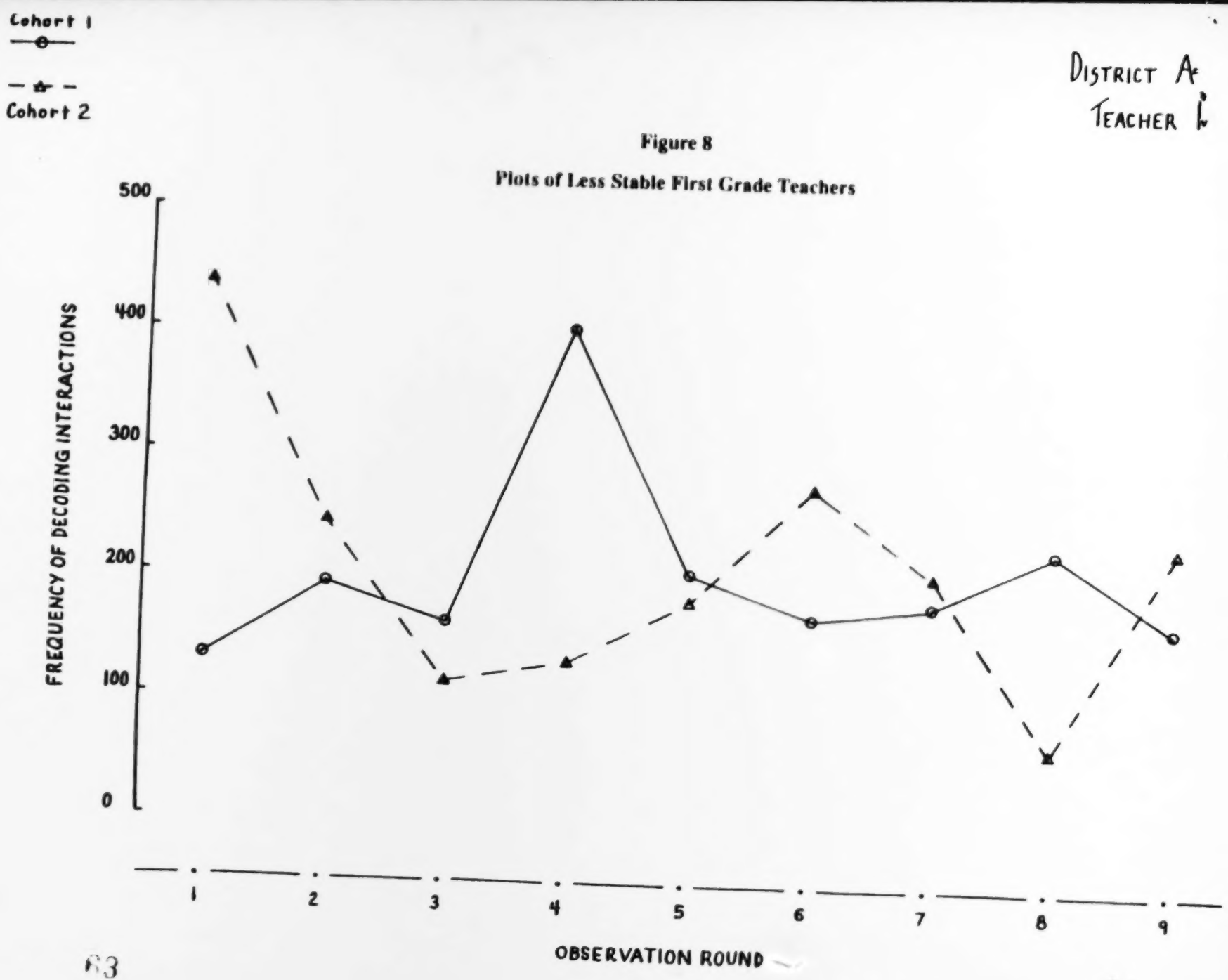


Figure 7, continued


Cohort 1
Cohort 2
DISTRICT A
TEACHER L
Figure 8
Plots of Less Stable First Grade Teachers
500
400
300
200
100
0
FREQUENCY OF DECODING INTERACTIONS
1
2
3
4
5
6
7
8
9
OBSERVATION ROUND

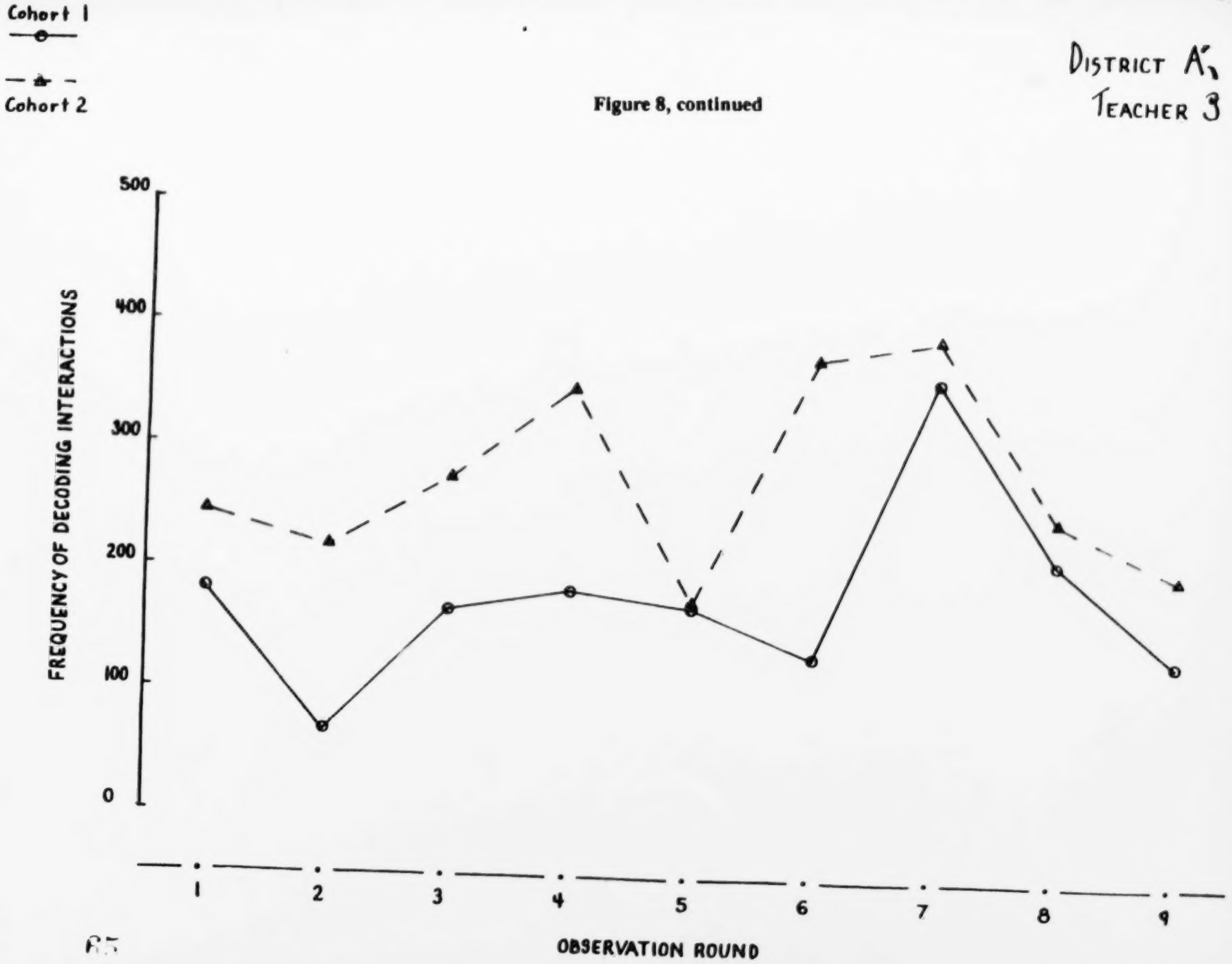


Figure 8, continued